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PROGRAM OF STUDIES FOR ELEMENTARY SCHOOLS

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PROGRAM OF STUDIES FOR ELEMENTARY SCHOOLS

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1975

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TABLE OF CONTENTS

Goals of Basic Education 1

Language Arts 4

 —Objectives 4

 —Reading 9

 —Spelling 14

 —Handwriting 16

Mathematics 21

Social Studies 28

Science 40

Health 48

Physical Education 54

Art 70

Music 70

French As A Second Language 72

GOALS OF BASIC EDUCATION*

Status of Goals Statement

In a world characterized by rapid change, yet counterbalanced by stabilizing influences, education must provide opportunities for students to meet individual and societal needs. This statement of goals is intended to give direction to the development of educational programs for Grades I - XII which will assist in meeting that dual set of needs.

As the variety among individuals and societies is broad, no attempt is made to place the goals in any order of importance. Such priorities might more appropriately be made at system or school levels. Despite the absence of stated priorities, none of the goals are to be deleted but complementary goals may be added.

In this regard goals concerning the relationship of people to a deity will have special significance for certain populations. Other goal areas may be of prime interest to other groups. Nevertheless the goals which follow, combined with such complementary goals as may be deemed necessary, form the basis for directing the educational endeavours of schools and school systems.

Finally, subsections under each goal are not meant to be inclusive but indicative of the intent of the goal.

1. Learn to be a good citizen.
 - a. Develop an awareness of civic rights and responsibilities.
 - b. Develop an understanding of the Canadian and other forms of government.
 - c. Develop a feeling of cultural identity and heritage at national and international levels.
 - d. Develop an attitude of respect for public and private property.
 - e. Develop an understanding of the obligation and responsibilities of Canadian and world citizenship.
2. Learn about and try to understand the changes that take place in the world.
 - a. Develop ability to adjust to the changing demands of Canadian society.
 - b. Develop an awareness of and the ability to adjust to a changing social and physical environment.

*Excerpt from 1975 Interim Edition of *Goals of Basic Education, Grades I - 12*, as prepared by the Department of Education.

- c. Develop understanding of the past, identity with the present and the ability to meet the future.
- 3. Develop skills in communication (listening, speaking, reading, writing, viewing).
 - a. Develop skill in understanding the communication of others.
 - b. Develop ability in communicating ideas and feelings effectively.
 - c. Develop skill in oral and written languages.
- 4. Learn how to organize, analyze and use information in a critical and objective manner.
 - a. Develop ability to organize information into meaningful categories.
 - b. Develop ability to apply scientific methods in the pursuit of and analysis of knowledge.
 - c. Develop skills of thinking and proceeding logically.
- 5. Learn to respect and to get along with people of varying beliefs and life styles.
 - a. Develop appreciation and respect for the worth and dignity of individuals.
 - b. Develop an understanding of functions, responsibilities and achievements of various societal institutions.
 - c. Learn to take into account the values of others when making personal choices.
- 6. Learn about the world of work.
 - a. Develop a feeling of pride in achievement and progress.
 - b. Develop the ability to use information and counselling services related to career decisions.
 - c. Develop skills basic to the world of work.
- 7. Develop management skills.
 - a. Develop an understanding of economic principles and responsibilities.
 - b. Develop skills in managing natural, financial and human resources.
- 8. Develop a desire for learning.
 - a. Develop intellectual curiosity and eagerness for lifelong learning.
 - b. Develop a positive attitude toward learning.
- 9. Learn how to use leisure time.
 - a. Develop interests which will lead to a wise and satisfying use of leisure time.

- b. Develop a positive attitude toward participation in a range of leisure time activities — physical, intellectual and creative.
- 10. Practice and understand the ideas of health, fitness and safety.
 - a. Develop an understanding of good physical and mental health practices.
 - b. Establish a good physical fitness program.
 - c. Establish sound personal health habits.
- 11. Appreciate culture and beauty in the world.
 - a. Develop creative self-expression through various media including the fine and practical arts.
 - b. Develop special talents in the arts.
 - c. Cultivate appreciation for beauty in various forms.
- 12. Develop basic and special knowledge competencies.
 - a. Develop understanding and skills in the use of numbers, natural sciences, mathematics and social sciences.
 - b. Develop a fund of information and concepts.
 - c. Develop special interests and abilities.

ELEMENTARY LANGUAGE ARTS

(Interim Statement)

Statement of the Objectives of Language Arts

The aim of elementary education is to provide opportunities for children to develop their potential and to improve and enjoy the social and physical environment. Communication, which is the ability to receive, process and express impressions from the environment, is essential to this development. Therefore, language arts should provide opportunities for children:

1. to actively experience language.
2. to become flexible users of language by:
 - (a) developing competencies in receiving information (critically) through listening, reading, viewing, touching, tasting, smelling;
 - (b) developing fluency in expressing ideas and feelings through oral language, written language, movement (gestures, creative drama), music and art;
 - (c) developing an appreciation and enjoyment of our language and our literary heritage;
 - (d) understanding the communication process as well as their role as receivers, processors or expressors in that process.
3. to develop their fullest potential as human beings through effective communication.

A Framework for the Language Arts

Individual Development

The elementary language arts program is designed to assist the child in becoming an independent, mature individual within society. A curriculum model for the language arts, therefore, must also recognize this concern by placing emphasis on the child. The model* developed for the new language arts does start with the child and reflects the belief that children have growth patterns; that, although alike in many ways, they do have differences; but that they must be able to take the many impressions they receive from their environment and integrate these into a pattern which is satisfying to themselves.

Individual Characteristics

In coming to understand the child, we should recall that each child has physical, intellectual and emotional characteristics. Physically, the child is multi-sensory, i.e. the world impresses itself on him through all his senses. He is alive and learns through his active involvement. As well, the child is sexual and he or she views the world through the eyes of a boy or girl. Physical behaviors collectively determine how the child receives, processes and expresses impressions concerning the environment.

Intellectually, each child is curious, creative, imaginative and logical. The

*Model appears on page 8 in its interim form.

intellectual behavior of the child may be identified as his ability to recall, comprehend, apply, analyze, synthesize and evaluate. Emotionally, the child's behaviors are concerned with his awareness and appreciation of, and characterization by the feeling or values held toward what he is thinking or doing.

The individual child, in his efforts to develop his potential, relies strongly on his ability to communicate. Therefore, how he feels about himself in relation to his ability to communicate will be a determiner of how he will attempt to relate to his social and physical environment. Through communication the child comes to know self and others. Also the perception of reality is improved. It is through the development of the physical, intellectual and emotional behaviors that such communication becomes possible.

Language Growth Patterns

In the development of communication skills there are directions in which growth takes place. Growth in these directions occurs in the receiving, processing and expressing of communication.

Further, the development occurs in cyclical and spiral fashion. The following growth patterns should be guides for the selection of learning opportunities for children:

1. Fluency in communication is a prerequisite to controlled communication.
2. Physical action precedes oral communication, which in turn develops before written expression.
3. Attention is often centred on specifics before arriving at generalizations, which in turn are appropriately applied.
4. Simple structures must be understood before complex structures.
5. Understanding of the concrete generally precedes an understanding of abstractions.
6. Growth takes place from one-level to multi-level usage of language.

The above are referred to as integrative strands. That is, they can contribute to the children being able to pattern the many impressions which bombard them daily.

Language Learnings [Components]

If children are to be effective in their communications with others there is value in understanding communication itself. Flexibility in the use of language requires knowledge of the **functions** for which language is used, the varieties and levels of language **tasks**, the variety of **context** in which language is used, and the various **modes** of expression. For example, discussion or dialogue is indicative of the oral mode of expression while mime or dance is suggestive of the action mode.

Comprehending the nature of communication modes is important. Children should come to recognize that the language modes are structured according to arbitrary convention. There is nothing in the modes which is inherently correct, and therefore the appropriateness of their usage is determined by agreements governing the particular communication situation. For example, formal language may not be needed or used on the playground;

slang is not usually used, except in selected instances, in writing expository paragraphs.

There are surrounding determiners which influence the nature of the communication. Both the mode and the level of acceptability are affected by these determiners. The communication capability of the individual is a prime determiner. This capability in turn is influenced by the context in which the communication takes place—peer groups, home, school, community and media. These same elements also place restrictions on the acceptability of the communication or message being prepared. There is great variation in what types of messages are acceptable to persons in each of these surrounding groups.

Children should become aware of their active role in the communication process, whether it be as presenters or receivers. Understanding of the differences in the roles of presenter, processor and receiver is also necessary for effective communication.

The development of positive self-images in children is facilitated if children are aware that each of them has ideas and feelings that are worthy of expression and that each is able to express them. Each child can come to know and appreciate the “self” of others through language. As well, the perception of reality and the ability to shape one’s environment are highly dependent upon the understanding and use of language.

In summary, the aim that the child will come to know himself, others and his environment; and will do this through understanding and using the communication process, the various modes of language, its determiners and styles, requires the interrelationship of these things in the curriculum. Such a curriculum will give pupils learning opportunities which broaden intellectual, emotional and physical behaviors in the receiving, processing and expressing of communication. Thought is recognized in this curriculum as mediator among these three elements of communication.

Curriculum Experiences

All the senses, individually and collectively, should appropriately be given opportunity for development in the receiving of communications or impressions from the environment. The translation of impressions so received should become the content which children will process through thinking, feeling, and acting. During the processing of communications they will organize the message, select the code in which the message will be expressed, and prepare the expression of the message. In expressing, children again should be given opportunities to use speaking, writing, moving, singing or drawing as forms of conveying the message.

Recommended Material for Language Arts

The presently recommended materials vary in the extent to which they integrate the various aspects of the language arts. No single publication satisfactorily deals with their total integration. Pending a revision of this program, the following materials will continue to be recommended.

Language

Grades 1 and 2: **Language and How to Use It**, Book 1 and Book 2, Scott, Foresman and Company, Revised Edition.

World of Language, Books Y and E, McGraw-Hill Ryerson, 1973 Canadian Edition.

Grades 3 to 6: **Nelson Language Stimulus Program**,
Thomas Nelson and Sons (Canada) Ltd.
Magic Seasons
Multiworlds
Manspace
Mediamind
World of Language, Books N, G, L, I, McGraw-Hill
Ryerson, 1973 Canadian Edition.

NOTE: Supplementary materials and prior textual authorizations are listed in the School Book Branch Catalogue. The *Elementary Language Arts Handbook* lists supplementary materials for the new course as well as the new recommendations.

Reading

In offering the language arts course, the advantages of integrating language development with reading development can lead to the use of present reading recommendations found on pages 9 and 10.

Spelling

Refer to present recommendations on pages 14 - 15.

COMMUNICATION — A CURRICULUM MODEL *

INDIVIDUAL		COMMUNICATION		CURRICULUM	
Development	Characteristics	Integrative Strands	Language Learnings	Receiving	Processing
	<ol style="list-style-type: none"> Physical <ul style="list-style-type: none"> —multi-sensory —active —sex Intellectual <ul style="list-style-type: none"> —curious —creative —imaginative —logical 	<ol style="list-style-type: none"> Fluency to control Active to oral to written Specific to general to application Simple to complex Concrete to abstract One-level usage to multi-level usage Implicit to explicit 	<ol style="list-style-type: none"> Language use in increasingly complex situations <ol style="list-style-type: none"> Functions <ul style="list-style-type: none"> —purposes for using language —flexible use of language Tasks <ul style="list-style-type: none"> —variety —levels Contexts <ul style="list-style-type: none"> —variety Modes <ul style="list-style-type: none"> —variety —written —oral movement <ul style="list-style-type: none"> —art forms —music —other media Knowledge of Modes <ul style="list-style-type: none"> —phonetic system —written system —changes in language Active role of learner <ol style="list-style-type: none"> communication process <ul style="list-style-type: none"> —roles of presenter, processor, receiver communication and the self and the self <ul style="list-style-type: none"> —knowing self and others —perceiving reality —shaping one's environment 	<ul style="list-style-type: none"> —listening —reading —viewing —hearing —touching —tasting —smelling 	<ul style="list-style-type: none"> —thinking (cognitive) —feeling (affective) —acting (psychomotor) —moving —singing
1. Growth Patterns					
2. Individual Differences					
3. Integrative					

THE CHILD

*Basic model was developed by a student seminar under the direction of Dr. P. A. McFetridge, University of Alberta, Edmonton.

READING

Objectives

The goal of the reading program is the maximum development of the reading potential of the individual. This goal is reached only in so far as the following objectives for reading are attained:

1. To stimulate a keen interest in learning to read.
2. To increase and enrich meaning vocabulary.
3. To develop systematic habits of word perception.
4. To develop comprehension and interpretation in abilities and skills.
5. To developing habits of reacting critically to ideas secured through reading.
6. To develop the ability to organize the ideas secured through reading and to apply them to new situations.
7. To develop ability to adjust the rate of reading to specific purposes and materials.
8. To develop ability to read aloud effectively.
9. To develop habits of reading voluntarily.
10. To cultivate preferences for and permanent interests in a wide variety of good literature.

The Total Reading Program

To achieve the desired objectives of the reading program, several types of instruction are required. These are:

1. Basic reading.
2. Extension reading.
3. Recreational reading.
4. Reading in the content subjects.
5. Corrective reading.

Each of these types of instruction forms a particular type of reading lesson which is developmental in nature. When these lessons are carefully planned they provide for the systematic development of understandings, abilities, skills, preferences, attitudes, and habits and at the same time recognize the basic needs of children.

1. Basic reading. This reading refers to the regular lessons when the basic readers and the workbooks are used to provide definite reading instruction. It includes silent and oral reading of the selections in the reader, discussion, reaction and integration of the ideas gained. In separate lessons which are related to the selections in the reader, word-perception abilities and comprehension skills are developed. The teachers' manuals and the workbooks provide materials for the development of these reading skills. Additional activities, also a part of the basic reading lessons, are designed to give children an opportunity to increase their fund of information about the topic introduced by the selection in the basic reader, to use the ideas gained by reading, and to broaden their interests.

2. Extension reading. This reading refers to those lessons in which the children, with some direction and guidance by the teacher, read with a considerable amount of independence, selections from other series of readers, books from the content fields, and story books. These reading activities provide opportunities for the children to practice and to improve the skills and abilities initiated during the reading of the basic readers and the accompanying skills-building lessons.

3. Recreational reading. This refers to the voluntary and independent reading of story books, magazines, informational books, or other materials selected by the child to serve his personal interests. During these reading periods, teachers attempt to cultivate preferences for and permanent interests in good literature. This reading also serves to improve the skills and abilities introduced during the basic reading lessons.

4. Reading in the content subjects. This refers to the reading that is required in the subject matter areas of the curriculum such as social studies, science, health, literature, and mathematics. The reading abilities and skills essential to effective study are initiated in the basic reading lessons but need to be strengthened by application in each of the content fields.

5. Corrective reading. This is a special type of reading lesson required when pupils experience difficulties which impede progress in reading. Teachers must recognize specific difficulties as pupils encounter them and accept responsibility for adapting instruction and materials to overcome any disability that may arise.

It is necessary to make provision for all these types of reading lessons and to *maintain a proper balance among them*. Overemphasis on one or more, to the neglect of the others, makes it impossible to realize the objectives of the reading program.

There is a mutiple authorization of readers and school boards are free to choose the series they wish to use. A table of readers follows.

RECOMMENDED READING SERIES

BASIC READERS

CANADIAN READING DEVELOPMENT SERIES—PRIMARY
(Copp Clark, 1965)

Pre-Primer

Off to School

Primer

Come Along with Me

Grade I

It's Story Time

Grade II

Stories Old and New—Book I

Stories Old and New—Book II

Grade III

*Stories of Fun and Adventure —
Book I*

*Stories of Fun and Adventure —
Book II*

Workbooks and Teacher's Manuals are available to accompany the readers.

GINN BASIC READERS

Readiness Books

Fun With Tom and Betty

**Games to Play*

Pre-Primers

My Little Red Story Book

My Little Green Story Book

My Little Blue Story Book

**Come With Us*

Primers

The Little White House

**Under the Apple Tree*

First Readers

On Cherry Street

**Open the Gate*

Second Readers

We Are Neighbours

Around the Corner

Third Readers

Finding New Neighbours

Friends Far and Near

Fourth Readers

Adventure Awaits

**Down Story Roads*

Fifth Readers

Beyond the Horizon

**Along Story Trails*

Sixth Readers

New Worlds

**On Story Wings*

**Enrichment readers are thus indicated.*

Workbooks and Teacher's Manuals are available to accompany the readers.

LANGUAGE EXPERIENCE READING PROGRAM

(W. J. Gage, 1970)

Level I

My First Practice Book

Level IV

Out and Away

Level II

Just for Me (Stream A)

For Me (Stream B)

Level V

Flying Free

Level III

Follow Me

Workbooks, Teacher's Source Books, and additional materials are available.

YOUNG CANADA READING SERIES

(Thomas Nelson & Sons)

Pre-Primers

Funny Surprises

Kittens and Bears

Pets and Puppets

Grade II

Magic and Make-believe

Grade III

Treats and Treasures

Primer

Mr. Whiskers

Grade IV

Young Canada Reader — 4

Grade I

The Toy-box

Fifth Reader

Young Canada Reader — 5

Sixth Reader

Young Canada Reader — 6

Workbooks and Teacher's Guidebooks to accompany the readers are available.

LITERARY READERS
SOUNDS OF LANGUAGE
(Holt, Rinehart & Winston)

Pre-Primer

Sounds of Home [1966]
Sounds I Remember [1972]

Primer

Sounds of Numbers [1966]

First Reader

Sounds Around the Clock [1966]
Sounds of a Powwow [1970]

Second Reader

Sounds of Laughter [1966]
Sounds After Dark [1970]

Third Reader

Sounds of a Storyteller [1966]

Fourth Reader

Sounds of Mystery [Revised Edition 1972]

Fifth Reader

Sounds of a Young Hunter [Revised Edition 1972]

Sixth Reader

Sounds of a Distant Drum [Revised Edition 1972]

Teachers' Editions are available.

SPELLING

The Place of Spelling

Spelling cannot be isolated from the rest of the curriculum; good spelling is more the result of classroom climate in which the pupils have a desire and a need to communicate effectively than it is the result of the isolated spelling lesson.

Enterprise, science, and other subjects develop a natural desire to communicate and add a vital purpose to good language, including good spelling. Clear enunciation in discussion or in reporting has a direct effect on spelling. The desire to communicate easily through good handwriting helps eliminate spelling errors.

Good spelling and a sound reading program are inseparable; structural and phonetic analysis in reading are of direct aid in spelling; reading vocabulary precedes spelling vocabulary; and spelling competence deepens the knowledge of words.

The teaching of spelling cannot be separated from the total school program.

Objectives

1. Primary Aims:

- To develop spelling power or a spelling sense which will help the pupil in spelling any required words, not mere mechanical competence in spelling a limited number of drilled words.
- To establish habits of self-dependence in writing: knowledge of how to locate correct spelling; ability to check the accuracy of spelling in all written work; competence in thinking out the spelling of required words; writing of derived forms.

2. Secondary Aims:

- To develop a spelling consciousness, i.e., a critical attitude toward one's own spelling.
- To develop a spelling conscience, i.e., an aversion to incorrect spelling.
- To teach correct pronunciation, depth of understanding, and correct usage of words through a comprehensive training in the use of the dictionary.

Materials

The following series of spellers are recommended for use in Alberta schools: MACMILLAN SPELLING SERIES, Books 2-6. Pupils' Editions and Teachers' Editions available.

BASIC GOALS IN SPELLING SERIES, Books 2-6, McGraw Hill. Pupils' and Teachers' Editions available.

Spelling Lists

Before a child can be taught to spell any words, these conditions must be met:

- The word must be in his speaking and reading vocabulary.
- He must be able to hear the sounds and say the word correctly.

- He must be able to see the word clearly, noticing similarities to and differences from other words.
- He must know the names of the letters in the word.
- He must learn eye-hand coordination so that he may form the letters.

Four lists may be differentiated:

- (a) **A basic word list**, comprising most of the words needed by a child in his writing. Ideally, such a list would be compiled by each teacher through a study of the unique needs and abilities of her class. However, since the time and labor involved in such a task is prohibitive, the basic list of words found in the speller may be used with confidence. This list ordinarily provides the raw material for the spelling lesson, the examples used in teaching for spelling power.
- (b) **A personal list** of words which frequently present difficulty to the individual. Such a list is made up by the teacher and pupil from the pupil's writing.
- (c) **Words of high permanent importance** used frequently in the subject fields. Such a list might include tool words used to write reports in enterprise or science.
- (d) **A personal list** of words the child finds interesting and wants to use and to spell correctly.

The size of these lists, particularly of (b), (c) and (d), will vary considerably with the spelling ability of the individual pupil. The pupil of superior spelling ability may master a larger personal list in addition to the basic list, while the demands of the basic list may frustrate the poor speller.

HANDWRITING

Objectives

Instruction in handwriting is successful to the degree that it develops:

1. Legible writing.
2. Ease of writing.
3. Adequate speed.
4. A pleasing appearance through neatness and the functional arrangement of written material on the page.
5. The desire to produce good handwriting as a result of the knowledge of its importance.
6. The ability to diagnose and correct specific faults.

Content

GRADES I AND II

Manuscript Writing

Letter Forms (see sample).

Beginning pupils are expected to use large letters, at least two spaces in height for tall letters and at least one space for single unit letters. As the pupils gain proficiency the letter size may be reduced somewhat and the speed increased.

GRADES III, IV, V, VI

Cursive Writing

Letter and Number Forms as they appear in sample.

Pupils are expected to improve their handwriting through these grades, paying particular attention to such things as letter form, slant, alignment, size, and quality of line. The use of pen and ink is recommended to begin in Grade IV. Acceptable speed standards are approximately the following:

Grade	II	III	IV	V	VI	VIII	VIII
Letters per minute	30	40	50	55	60	65	70

Materials

Teachers' References

LANGUAGE SKILLS IN ELEMENTARY EDUCATION by Paul S. Anderson, N. Y., Macmillan, 1964.

DEVELOPING LANGUAGE SKILLS IN THE ELEMENTARY SCHOOLS. Boston: Allyn and Bacon, 1963.

MANUSCRIPT WRITING

CAPITALS:

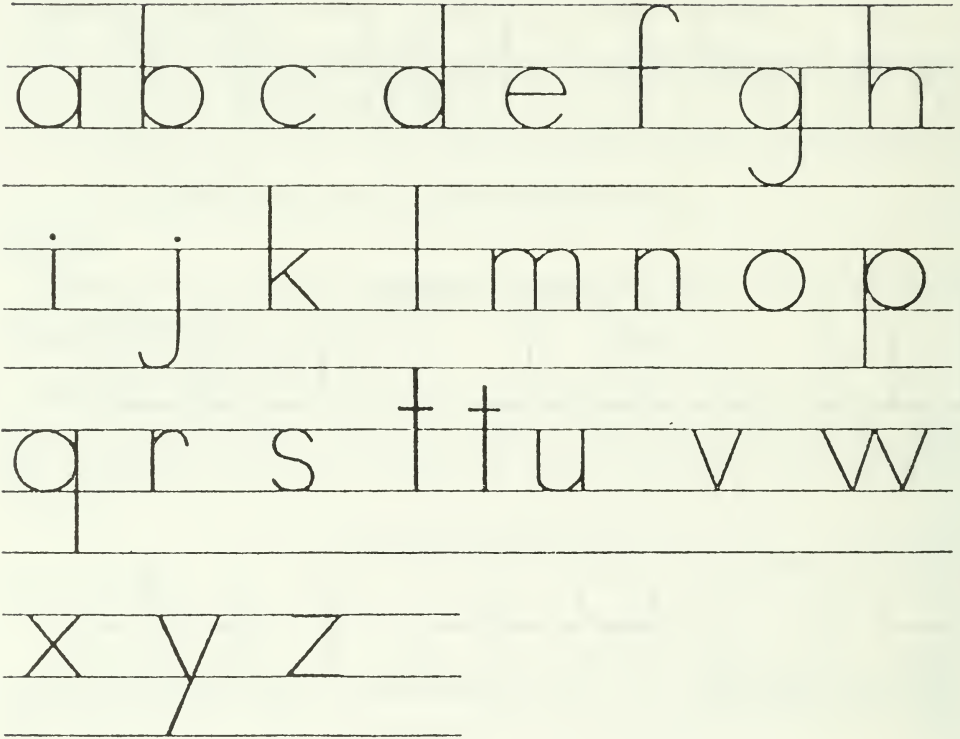
A B C D E F G

H I J K L M N O

P Q R S T U

V W X Y Z

LOWER CASE LETTERS:



CURSIVE WRITING

CAPITALS AND NUMERALS:

A B C D E F

G H I J K L

M N O P Q R

S T U V W X

Y Z 1 2 3 4 5 6 7 8 9 0

LOWER CASE LETTERS:

a b c d e f
g h i j k l m
n o p q r s t
u v w x y z

t p d

MATHEMATICS

General Objective

The aim of Elementary School Mathematics is to foster continuous and maximum development of each child's potentialities in terms of the affective domain, the cognitive domain, and the psychomotor domain.¹

Growth in these behavioral domains which assists the child in relating to his social and physical environment results from the use of content as the means of developing processes such as:

1. The process of communicating — using mathematical language and associated symbolism
2. The process of recall — providing a vehicle for the development of cognitive skills
3. The process of conceptualizing mathematical principles
4. The process of seeing relationships among mathematical principles
5. The process of generalizing — finding common elements among mathematical concepts
6. The process of making applications — applying generalizations to new situations.
7. The process of self-direction — searching for mathematical ideas
8. The process of discovery — recognizing mathematical ideas
9. The process of creativity — generating mathematical ideas
10. The process of appreciating the beauty, simplicity and heritage of mathematics
11. The process of problem solving — identifying, hypothesizing, interpreting, relating, evaluating, concluding

Content → Processes → Growth in Behavioral Domains

A program in Elementary Mathematics strives to develop within the student an inquiring mind and to aid the student in gaining the understandings, skills, abilities, attitudes, values, and appreciations related to the growth of a mature individual who thinks and acts effectively, and who, as a result, may contribute to society. The above may be accomplished through an appropriate degree of individual performance in relation to the concepts, principles and operations outlined in the Sequence Development. Understanding should take precedence over verbalization.

A carefully balanced program is required for the learner to gain an ever-expanding understanding and insight into the structure and organization of mathematics, to allow him to search for patterns in his social and physical environment. The processes suggested are the key to learning and apply to all realms of education. Balanced judgment is required so that too much stress is not

¹ Benjamin S. Bloom (ed.), *Taxonomy of Educational Objectives*, Handbook I: Cognitive Domain (New York: David McKay Co., 1956), pp. 7-8.

David R. Krathwohl et al., *Taxonomy of Educational Objectives*, Handbook II: Affective Domain (New York: David McKay Co., 1964), pp. 6-8.

placed on one process to the neglect of others. Each process is important and often should be recognized as being interrelated and interdependent. A similar approach may also be applied to desired growth in the three behavioral domains, realizing that rather than setting priorities amongst them, one would accept all as vital to the growth of the individual student.

*Sequence Development*²

In the development of the three major divisions of the mathematics program, the interpretation of the sequence is as follows:

----informal and introductory experiences

****formal and planned activities

===== extended and enrichment experiences

The sequential outline provided may be used as a guide for teachers or systems wishing to use their own competence and student interest for developing the program. Students should develop understanding of the concepts indicated but the degree of mastery will be dependent on the ability of the child along with other related factors.

²Adaptation drawn from *Interim Revision Mathematics*, Ontario Department of Education, 1966.

DESIGN OF CONCEPTUAL DEVELOPMENT

I. NUMBER AND NUMERATION SYSTEMS

← Elementary →

Concept of cardinal numbers

- comparison of groups: equal and unequal
- counting
- zero as a cardinal number
- numeration: place value, expanded notation, regrouping
- factors, primes and composites
- other numeration systems
- formation of written numerals
- numbers to bases other than ten
- historical development

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Concept of ordinal numbers

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Concept of fractional numbers

- part or parts of a whole
- part or parts of a group
- decimal notation

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--  *****  =====
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Concept of addition as a binary operation, commutative and associative

- computation with whole numbers
- computation with fractional numbers in common notation
- computation with fractional numbers in decimal notation
- problem solving

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Concept of subtraction as a binary operation, inverse of addition

- computation with whole numbers
- computation with fractional numbers in common notation
- computation with fractional numbers in decimal notation
- problem solving

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Concept of multiplication as a binary operation, repeated additions and the product of two factors, commutative, associative and distributive principles

- computation with whole numbers
- computation with fractional numbers in common notation
- computation with fractional numbers in decimal notation
- problem solving

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Concept of division as the inverse of multiplication

- computation with whole numbers
- computation with fractional numbers in common notation
- computation with fractional numbers in decimal notation
- problem solving

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Concept of integers

- addition and subtraction
- addition by vectors on a line, to introduce the negatives

----- *****
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Elementary



Concept of relationship — of size, position, form, quantity

- gathering data
- graphical representation
- probability

*Matching, one-to-one
correspondence*

many-to-one correspondence

- equality and inequality —
equal to, greater than, less
than
- elementary functions and
patterns, as games and num-
ber puzzles

* * * * *

Concept of measurement

Linear measurement

- estimation, non-standard
unit, standard units

Measurement and relationships of area

- estimation, non-standard
unit, standard units

Measurement and relationships of volume

- estimation, non-standard unit, standard units

* * * * *

Measurement and relationships of time

- estimation, standard units

* * * * *

Measurement of temperature

- standard units

* * * * *

Relationships of money

- estimation, standard units

* * * * *

Graphing of simple relationships

- pictographs, bar graphs
- circle graphs, line graphs

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Concept of ratio — rate

* * * * *

MEASUREMENT AND RELATIONSHIPS (cont'd.)	<div> <div> <div>←</div> <div>≡</div> <div>→</div> </div> <div>Elementary</div> <div> <div>≡</div> <div>→</div> </div> </div>
<div> <div>Equations as symbolic representations of relationships</div> <div> <div>—with placeholders</div> <div>—with missing operational signs</div> <div>—with more than one operation</div> </div> <div>Properties of equality and inequality relations</div> <div>—solving by inspection, using placeholders</div> </div>	<div> <div>----- ***** = = = = =</div> <div>----- ***** = = = = =</div> <div>----- ***** = = = = =</div> <div>----- ***** = = = = =</div> </div>
III. GEOMETRY — SHAPES AND SPACE AND LOCA- TION	<div> <div> <div>←</div> <div>≡</div> <div>→</div> </div> <div>Elementary</div> <div> <div>≡</div> <div>→</div> </div> </div>
<div> <div>Sets of points</div> <div>Concepts: point, space, curve, line, line segment, ray, angle, plane, polygon, circle (as sets in Euclidean space)</div> <div>Concept of dimension</div> <div>3 dimensional—space region</div> <div> <div>—solid shapes</div> <div>—cube, sphere, cylinder, cone, simple regular and semi-regular polyhedra</div> <div>—faces, edges, vertices: number relationships</div> <div>—area, volume</div> </div> <div>2 dimensional — plane regions — closed curve</div> <div> <div>—simple regular polygons, and some irregular polygons, circle, ellipse</div> <div>—edges, vertices: number relationships</div> <div>—interrelationships of plane figures: triangle/square, sector/circle</div> </div> </div>	<div> <div>----- ***** = = = = =</div> <div>----- ***** = = = = =</div> <div>----- ***** = = = = =</div> <div>----- ***** = = = = =</div> <div>----- ***** = = = = =</div> <div>----- ***** = = = = =</div> </div>

III. GEOMETRY — SHAPES AND SPACE AND LOCA- TION (cont'd.)	<div> <div>←</div> <div>Elementary</div> <div>→</div> </div>
<div> —concepts of symmetry, of congruency —translations, rotations, reflections —perimeter, area, scale drawings —constructions <i>Space and Numbers</i> Interrelationships: numeri- cal illustrations of geom- etrical patterns and vice versa </div>	<div> <div>----- ***** =====</div> <div>----- ***** =====</div> <div>----- ***** =====</div> <div>----- ***** =====</div> </div>

Recommended Series

Primary References

Eicholz, O'Daffer et al. *Elementary School Mathematics*. Canadian Edition. Addison-Wesley Co., 1969. (Grades III - VI.)

Hartung, Van Engen et al. *Seeing Through Arithmetic*. Revised. Gage & Co., 1968. (Grades I - VI.)

SOCIAL STUDIES

Rationale

Alberta's social studies curriculum (Grades I-XII) is premised on the assumption that schools must help students in their quest for a clear, consistent, and defensible system of values. Two inter-related implications of this assumption for social studies instruction stand out: firstly, students must be enabled to explore and assess the nature of values that influence their personal and social lives; secondly, students must be assisted to develop the ability to make decisions pertinent to both their individual beings and their roles as active participants in their physical and social environments.

Values to live by

In keeping with the basic tenets of democracy (and with optimism about the nature of man and the efficacy of democratic ideals), the social studies program invites open inquiry into the definition and application of individual and social values. Such inquiry will offer students **experience in living as preparation for living**. It cannot be assumed that the ability to make decisions of either a personal or social nature is a skill that children are either born with or acquire incidentally. Rather, it is a skill that is developed as children acquire appropriate knowledge and analyze and clarify values, attitudes and feelings that are contingent upon situations and issues. Stated differently, it might be said that knowledge is an essential component of the decision-making process but is not in and of itself sufficient. Values, attitudes, and feelings frequently determine what knowledge we will accept, and consequently, the nature of decisions that we make. It is necessary, therefore, for students to gain experience in identifying, clarifying, and assessing values, and establishing how they relate to the knowledge derived. In this way, children will come to know their own ideas and feelings as well as those of their peers and the adult generation; they will deal not only with "what is" but also with "what ought to be" and will acquire those skills they will need as intelligent shapers of their world.

ATTENDING TO AFFECTIVE AND COGNITIVE OBJECTIVES

A. The Valuing Process

*Priority on
Valuing*

Consistent with the above rationale, the objectives of the social studies program¹ place high priority on the valuing process. The valuing process involves three basic skills.² Students in the Alberta social studies should demonstrate that they are:

Choosing—

1. Identifying all known alternatives.
2. Considering all known consequences of each alternative.
3. Choosing freely from among alternatives.

*Acting upon
values*

Prizing—

4. Being happy with the choice.
5. Affirming the choice, willingly and in public if necessary.

Acting—

6. Acting upon the choice.
7. Repeating the action consistently in some pattern of life.

*Affective and
Cognitive
aspects of
valuing*

As students engage in the valuing process, the experience will involve both emotional reactions and intellectual understandings. It is essential to distinguish these affective and cognitive capacities and to direct educational effort along both dimensions.³

B. Affective Objectives

Affective objectives emphasize a feeling tone, an emotion, or a degree of acceptance or rejection. To choose, prize and act consistently and effectively, students should demonstrate that they are:

¹ Please note that the objectives which follow are expressed in behavioral terms. They indicate the processes in which students should engage and, in a general way, identify the substantive content to which students' behavior should relate. In other words, the objectives include both processes and content.

² Rath, Louis, et al., *Values and Teaching* (Columbus, Ohio: Charles E. Merrill & Co., 1966).

³ Scriven, Michael, "Student Values as Educational Objectives" (West Lafayette, Ind.: Social Science Education Consortium, 1966) p. 18.

*Internalizing
a value
complex*

- Aware of values, willing to take notice of values, and giving controlled or selected attention to values
- Responding to values with openness, willingness and satisfaction
- Accepting values, preferring values and committing themselves to values
- Conceptualizing their own values and organizing a value system
- Becoming characterized by a value or value complex.⁴

The values referred to above should, at the awareness and response levels, include a wide range of individual and social values. Students eventually should accept, prefer, and commit themselves to certain of these values, while rejecting others. Finally, they should conceptualize their own values, organize a value system, and through their actions, become characterized by a particular value or value complex.

*Value issues
as content*

A powerful means of attaining these affective objectives is to have students confront real problems that involve conflicting values. Such problems may be referred to as value issues. Focusing upon value issues can enable students to clarify their own values and to recognize the value positions of others. Peer relationships, family matters, work, politics, religion, money, recreation, morality, culture, and other problem areas are fertile sources of value issues. The most potent of value issues will require students to examine their own behavior relative to:

1. The dignity of man
2. Freedom
3. Equality
4. Justice
5. Empathy
6. Loyalty
7. Other values

⁴ Krathwohl, David, et al., *Taxonomy of Educational Objectives: Affective Domain* (New York: David McKay Co., Inc., 1964).

C. Cognitive Objectives

Cognitive objectives involve the solving of some intellectual task. The choosing, prizing and acting phases of the valuing process require that each student develop cognitive skills that will enable him to work with others in the solving of social problems. The cognitive skills which are exercised in problem solving are varied and complex. These skills may be summarized as follows.⁵ Students should be able to:

*Cognitive
skills
summarized*

- Recall and recognize data which are pertinent to social problems
- Comprehend pertinent data (This skill includes the ability to translate, interpret and extrapolate from data.)
- Analyze pertinent data in order to identify elements, relationships and organizational principles
- Evaluate pertinent data in terms of internal and external criteria
- Synthesize pertinent data in order to create an original communication or propose a plan of action
- Apply pertinent data in the solving of social problems.

The “data” referred to in the above objectives might be drawn from everything man knows, believes, and can do—both formally structured knowledge from the disciplines and informally structured knowledge from ordinary experience.⁶ Such data include:

*Categories of
knowledge
content*

- Knowledge of specific terminology and facts
- Knowledge of ways and means of dealing with social problems
- Knowledge of concepts, generalizations, theories and structures.⁷

⁵ Bloom, Benjamin, et. al., *Taxonomy of Educational Objectives: Cognitive Domain* (New York: David McKay Co., Inc., 1956) and Sanders, Norris M., *Classroom Questions: What Kinds?* (New York: Harper and Row, 1967). Note that skills have been listed in an order more closely resembling the problem solving process. Bloom's *Taxonomy* lists skills according to difficulty; the order being recall, and recognition, comprehension, application, analysis, synthesis, and evaluation.

⁶ Johnson, Mauritz, *The Translation of Curriculum into Instruction* (Ithaca, N.Y.: Cornell University, 1968), p. 2.

⁷ Bloom, *op. cit.*, p. 62 ff.

Knowledge of specific terminology and facts should serve as a basis for dealing with social problems and understanding concepts, generalizations, theories and structures.

Knowledge of ways and means of dealing with social problems should include the ability to:

*Problem
solving
method*

1. Identify and clarify the problem
2. Formulate hypotheses
3. Collect data
4. Classify data
5. Analyze data and evaluate the desirability and feasibility of taking action on the problem
6. Propose a course of action and examine the desirability and feasibility of taking action on the problem.⁸

Knowledge of ways and means of dealing with social problems should also include the ability to:

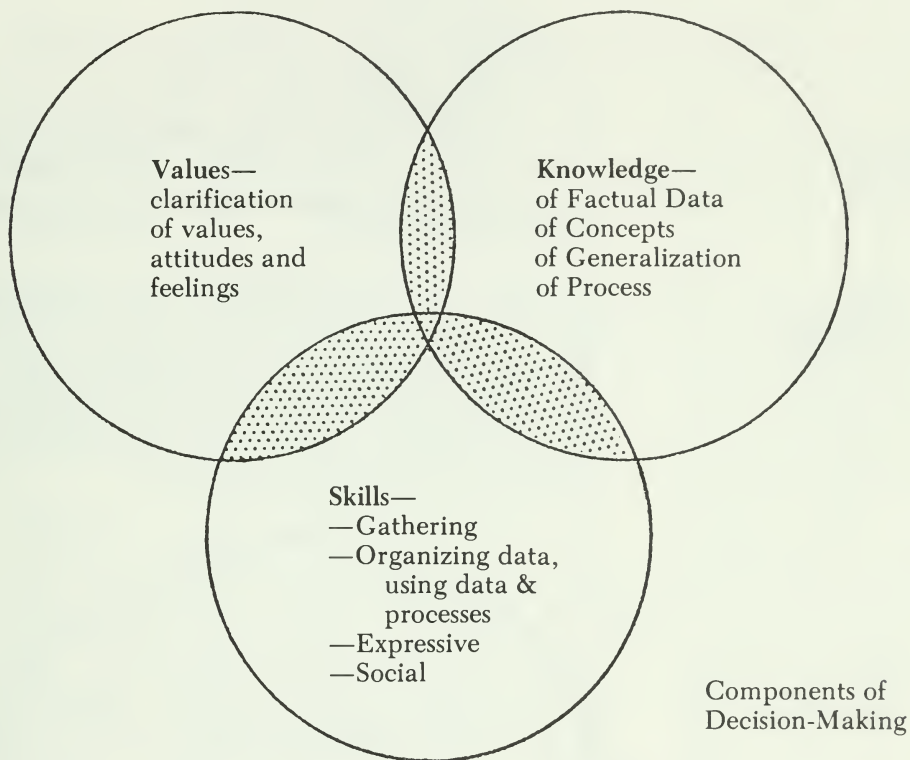
*Social
skills*

1. Interpret the feelings and ideas of others
2. Respond to the feelings and ideas of others in a manner appropriate to the occasion
3. Express one's own feelings and ideas to others
- 4 .Cooperate with others, though not to the extent of compromising basic values.

⁸Simon, Frank. *A Reconstructive Approach to Problem-Solving in the Social Studies* (Calgary: The University of Calgary, 1970). The Simon model differs from most methods of problem solving in that it leads to action on the problem.

INTER-RELATEDNESS OF VALUES, KNOWLEDGE AND SKILLS

The inter-relatedness of the values, knowledge, and skills components of the Alberta social studies curriculum might be diagrammatically represented as follows:



In the decision-making process, **knowledge** in its various forms is essential but dependent for its existence, validity and application upon the skills used to obtain, organize and apply it, and the influence of pertinent values. Similarly, **skills** of a varied nature must be developed to facilitate sound decision-making, for these are the vehicle by which knowledge is obtained and values explored. Finally, **values, attitudes, and feelings** are explored, clarified, and assessed by the utilization of skills and in the light of an ever-expanding knowledge base.

Knowledge of concepts, generalizations, theories and structures should result from students synthesizing the specific data gathered or produced while confronting value issues. Some of the major concepts needed in studying human behavior are outlined below. These concepts should be used by students in developing generalizations and theories which seek to explain people's values.

Inter-disciplinary base of social studies concepts

INTERACTION is a key concept in the understanding of social problems. History, geography and the social sciences describe in part man's interaction with his social and physical environment.

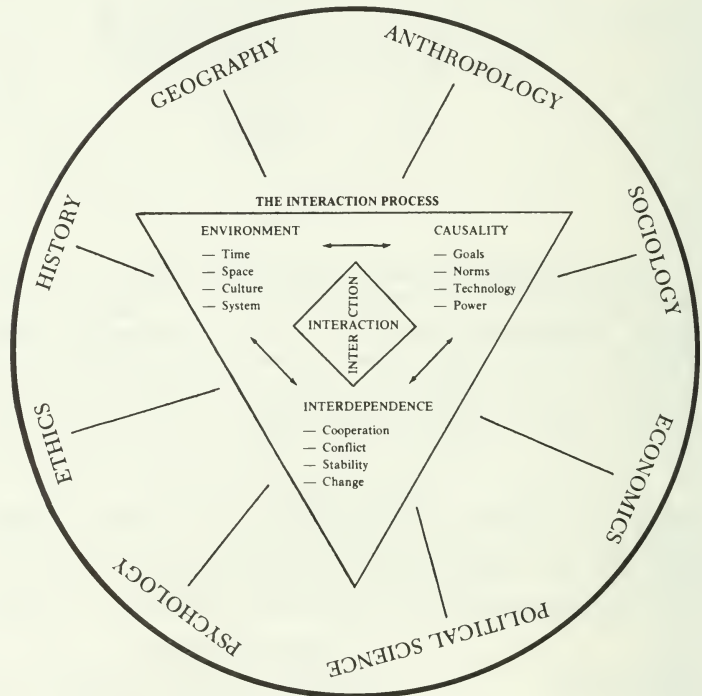
1. **ENVIRONMENT** is, itself, an important concept which can be defined in terms of **Time, Space, Culture and Systems**.

2. Man's interaction with his environment produces **CAUSAL RELATIONSHIPS**. In order to understand causality, one needs to recognize that behavior is affected by **Goals, Norms, Technology, and Power**.
3. Since all man's interactions involve cause and effect relationships, he lives in a state of **INTERDEPENDENCE**. Interdependence may take the form of **Cooperation** and/or **Conflict** and may produce **Stability** and/or **Change**.

A diagrammatic representation of the interaction process appears below.

*The
spiralling
of concepts*

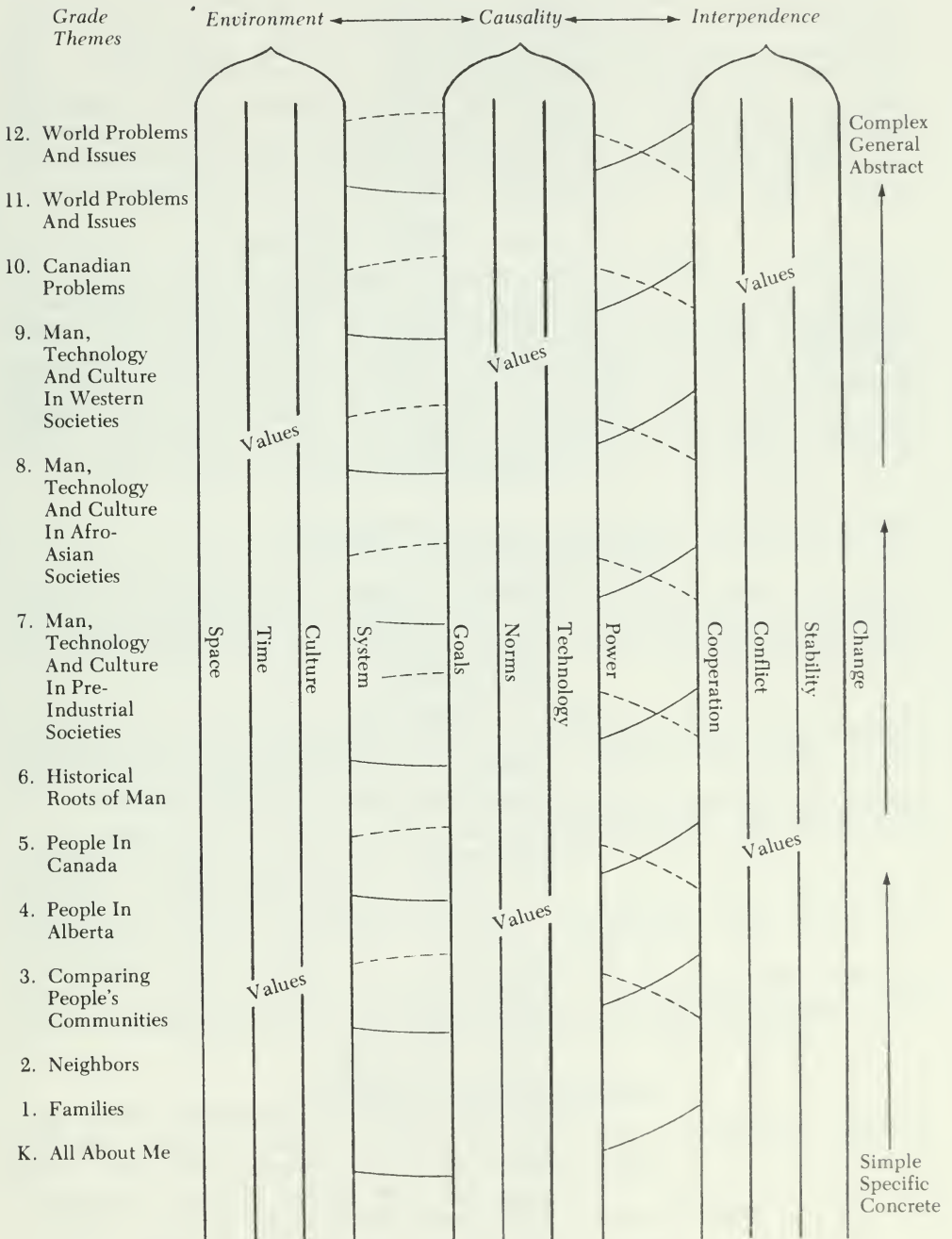
These and other concepts should be studied in more than one grade level on the understanding that lower grades will attend to the concept in a specific, concrete and simple manner. Succeeding grades will treat each concept in greater generality, abstractness, and complexity.⁹ A diagrammatic representation of spiralling concepts is shown on page 35.



⁹Taba, Hilda, *Teachers' Handbook for Elementary Social Studies* (Don Mills, Ontario: Addison-Wesley Company, 1967), Chapter 4.

THE SPIRAL OF CONCEPT DEVELOPMENT

The Interaction Process



Values: Dignity of Man, Freedom, Equality, Loyalty, Justice, Empathy, etc.

Planning For The Attainment of Multiple Objectives

The preceding statements of objectives offer only a general indication of the processes and content of learning opportunities in the social studies. **More detailed planning of learning opportunities is the responsibility of each teacher and class.** All learning opportunities must be consistent with the objectives outlined above, whether the learning opportunity arises from the structured scope and sequence or in connection with a problem of current interest.

*Two-thirds
time on
structured
scope and
sequence*

A. Structured Scope and Sequence

Approximately two-thirds of social studies class time will be spent inquiring into themes, value issues and concepts which fall within a scope and sequence specified by the Department of Education. This scope and sequence is very general, thus permitting teachers and students to select learning opportunities according to their own needs and interests. Topics and themes for each grade are indicated below:

Kindergarten—All About Me

Grade I—Families

- Analysis of family living through case studies of, **for example**, a contemporary family, a family of long ago, an Afro-Asian family, and other families

Grade II—Neighbours

- Analysis of interactions which occur among, **for example**, the local neighbours, rural and urban neighbours, neighbours in other cultures

Grade III—Comparing People's Communities

- Comparison and contrast of community life in, **for example**, a modern-day Indian or Eskimo community and a North-American megalopolis; a village in Africa or Asia, and a community in the Pacific, or tropical South America; a Mennonite or Hutterite community and other communities which lend themselves to comparison and contrast

Grade IV—People in Alberta

- Historical, economic, sociological and/or geographic analysis of Alberta's people, including comparison and contrast with other world areas that have similar historical, geographic and/or economic bases, **for example**, Australia, Argentina, U.S.S.R., Middle East oil producers, Western U.S.A. and other areas

Grade V—People in Canada

- Sample studies to analyze historical and/or contemporary life in Canadian regions, for example, people in an Atlantic fishing port, people in a French-Canadian mining town or farm community, people in a St. Lawrence Seaway port, people in an Ontario manufacturing center, people in a Prairie farm or oil town, people in a British Columbia fruit or forestry industry, people in a Western distribution center, people in a coastal city, people in a Northern mining town, and other sample studies

Grade VI—Historical Roots of Man

- Anthropological analysis and social history of early civilizations in, for example, The Mediterranean area (e.g., Egypt, Greece, Rome), The Far East (e.g., India, China), The Americas (e.g., Incas, Mayans, Aztecs, North American Indian), and Africa (e.g., Numidians, Nubians, or other tribes).

Grade VII—Man, Technology and Culture in Pre-Industrial Societies

- Conceptual understanding of Man, Technology and Culture through case studies of primitive, pre-industrial societies to be selected by teachers and students

Grade VIII—Man, Technology and Culture in Afro-Asian Societies

- Depth studies of societies selected from Africa, Asia (excluding the U.S.S.R.), the Middle East and Pacific Islands

Grade IX—Man, Technology and Culture in Western Societies

- Depth studies of societies selected from the Americas (excluding Canada), Europe, all of U.S.S.R., Australia and New Zealand

Grade X—Canadian Problems

- Historical, economic, sociological, political problems facing Canada

Grade XI—World Problems and Issues

- Tradition versus Change
- Population and Production

Grade XII—World Problems and Issues

- Political and Economic Systems
- Conflict and Cooperation

B. Problems of Current Interest

*One-third
time
unstructured*

Approximately one-third of class time in social studies may be devoted to problems that are of current interest to students and teachers. The Department of Education does not intend to structure the use of this one-third time. Problems which meet the criteria which follow may arise as extensions of the main themes and value issues for each grade. They may relate to problems of individual students, the school, the community, or the world, and may concern the past, the present and/or the future. A given problem may be studied by the whole class, by a group, or by individual students. It is important that a record be kept of the problems studied by each student throughout his or her school career.

*Joint
Planning*

Students and teachers should jointly plan the use of the one-third time. Generally speaking, the teacher should view the one-third time as an opportunity for students to develop independence and responsibility.

The amount of teacher leadership required in the planning and use of the one-third time will vary according to the ability, experience, and maturity of the class. The teacher's influence should be exerted in a manner and to a degree consistent with this objective.

*Distribution
of time*

The one-third time may be distributed over the school year (or semester) in any way that students and teachers see fit. Three of the many possible alternatives are:

1. One time block, accounting for one-third of total class time, taken at any point during the year
2. Two- or three-week "units" of time, accounting for one-third of total class time, taken at various points during the year
3. Propitious occasions, accounting for one-third of total class time, taken at opportune times during the year.

C. Criteria for Selecting Learning Opportunities

In selecting the processes and content for day-to-day experiences in the social studies curriculum—whether for the two-thirds time broadly structured by the Department of Education or for the one-third time devoted to problems of current interest—teachers and students should attend to the following criteria:

Futurity

1. Does the experience have futurity? That is, can it contribute to the attainment of affective and cognitive objectives?
 - a) Does it involve a pertinent value issue?
 - b) Can it contribute to the development of social and/or inquiry skills?
 - c) Does it provide for growth in students' understanding of concepts?
 - d) Does the experience fit as part of a sequence which will lead to a **reasoned pride in Canada** tempered with a **world view** and an understanding of significant social problems?

Relevance

2. Is the experience **relevant** to the needs and interests of students?

Materials

3. Are **data and materials** available and/or can students gain experience through gathering primary data?

Overlap

4. Does the experience **avoid** the disadvantageous **overlap** and repetition of experiences in earlier or later grades?

SCIENCE

The new elementary school science program has two fundamental but inseparable aims. By emphasizing the development and use of inquiry skills as tools of investigation, the program is designed to enable the student to better understand and appreciate the true nature of science. To have the student develop basic science concepts is a second aim. A number of concepts, that is abstract ideas generalized from particular experiences, are to be developed under each of the six major conceptual schemes which provide a framework and structure for the program at each grade level.

The Six Major Conceptual Schemes are:

1. When energy changes from one form to another, the total amount of energy remains unchanged.
2. When matter changes from one form to another, the total amount of matter remains unchanged.
3. Living things are interdependent with one another and with their environment.
4. A living thing is the product of its heredity and environment.
5. Living things are in constant change.
6. The universe, and its component bodies, is constantly changing.

Objectives

1. Skills

As a result of science instruction, the elementary school pupil should:

- a. develop the ability to inquire, i.e., ability to think and investigate science through the use of process skills (behaviors) such as observing, classifying, communicating, inferring . . .
- b. demonstrate manipulative skills in the use of apparatus in order to conduct investigations.

2. Attitudes

Much of the spirit and meaning of science is transmitted to students from the teacher. The teacher must create conditions of learning that will enable the student to:

- a. demonstrate a growing curiosity and interest
- b. demonstrate intellectual honesty
- c. be open-minded
- d. look for cause-effect relationships
- e. suspend judgment when data is inadequate

3. Concepts

As the student proceeds through the elementary school science program, he should develop an increasing body of scientific information in the form of concepts.

Recommended References

Concepts in Science Series (Longman Canada)

Science for Tomorrow's World Series (Collier-MacMillan Canada)

Science, a Modern Approach Series (Holt, Rinehart & Winston of Canada)

SKILLS TO BE DEVELOPED IN SCIENCE

1. Process Skills

A key objective of the elementary school science program is to make the student an increasingly active and dynamic investigator of science—using the processes of the scientist. Through systematic development of these processes, the student becomes increasingly more equipped for more complex science learnings. The new elementary school science program considers the following processes to be an essential part of the students' learnings.

- a) observing — using the senses
- b) classifying — grouping related objects or ideas
- c) quantifying — using number and measure
- d) communicating — using such means as discussion, tabulation, graphing
- e) inferring — using indirect observation
- f) predicting
- g) formulating hypotheses — If (this is done), then (this will happen)
- h) defining terms
- i) controlling variables
- j) interpreting data and results
- k) formulating models — verbal, pictorial and concrete
- l) experimenting — planning and designing an investigation

2. Motor Skills

In order to develop manipulative skills, pupils in elementary school science must have frequent opportunities for first-hand investigative experiences that involve the handling of materials and equipment.

CONCEPTUAL ORGANIZATION OF CONTENT GRADE ONE

CONCEPTUAL SCHEME A

WHEN ENERGY CHANGES FROM ONE FORM TO ANOTHER, THE TOTAL AMOUNT OF ENERGY REMAINS UNCHANGED.

Concepts

1. Energy (a force) must be used to set an object in motion or to alter its motion.
2. Energy is used to do work.
3. Work is force acting through a distance.
4. Force is used to counteract force.

CONCEPTUAL SCHEME B

WHEN MATTER CHANGES FROM ONE FORM TO ANOTHER, THE TOTAL AMOUNT OF MATTER REMAINS UNCHANGED.

Concepts

1. Matter exists in various forms and states — solids, liquids and gases.

2. Heat may cause a change in the state of matter.
3. Evaporation and condensation are changes in the state of matter.

CONCEPTUAL SCHEME C

LIVING THINGS ARE INTERDEPENDENT WITH ONE ANOTHER AND WITH THEIR ENVIRONMENT.

Concepts

1. There is an interchange of matter and energy between living things and their environment.
2. Organisms (living things) reproduce their own kind.
3. There is an interchange of matter and energy between living things and their environment. Adequate amounts of both are required for optimum growth.

CONCEPTUAL SCHEME D

A LIVING THING IS THE PRODUCT OF ITS HEREDITY AND ENVIRONMENT.

Concepts

1. Organisms (living things) reproduce their own kind.
2. There is an interchange of matter and energy between living things and their environment. Adequate amounts of both are required for optimum growth. Size and structure are determined by heredity and environment.

CONCEPTUAL SCHEME E

LIVING THINGS ARE IN CONSTANT CHANGE.

Concept

1. Animals of the past were different from the animals of the present.

CONCEPTUAL SCHEME F

THE UNIVERSE, AND ITS COMPONENT BODIES, ARE CONSTANTLY CHANGING.

Concept

1. The sun is the source of our light energy.

GRADE TWO

CONCEPTUAL SCHEME A

WHEN ENERGY CHANGES FROM ONE FORM TO ANOTHER, THE TOTAL AMOUNT OF ENERGY REMAINS UNCHANGED.

Concepts

1. The sun is our prime source of energy.
2. Chemical energy can be changed to light energy and heat energy.
3. Energy can be transferred from one place to another.
4. Energy can be transferred through the molecules of solids, liquids and gases.

5. Sound is a transfer of energy through the molecules of solids, liquids, or gases.
6. Sounds vary in pitch; they may be high or low.
7. Sound travels through solids, liquids, or gases.
8. Sound results from the vibrations of molecules in solids, liquids, or gases.
9. Sound waves travel through molecules of solids, liquids, or gases.
10. Sound is a transfer of energy in a wave pattern through molecules of solids, liquids, and gases.
11. Light is a form of energy.
12. Matter on the sun is converted to energy, including light energy.
13. Light is a form of energy transferred as a wave.
14. Sight is a physiological response to the stimulus of light energy.

CONCEPTUAL SCHEME B

WHEN MATTER UNDERGOES CHEMICAL CHANGE, THE TOTAL AMOUNT OF MATTER REMAINS UNCHANGED.

Concepts

1. A molecule is the smallest part of a substance which retains the chemical properties of that substance.
2. Heat energy causes water to expand.
3. Heat energy causes air to expand.
4. Heat energy causes matter to expand.

CONCEPTUAL SCHEME C

LIVING THINGS ARE INTERDEPENDENT WITH ONE ANOTHER AND WITH THEIR ENVIRONMENT.

Concept

1. Living things depend for their energy on a flow of materials from the environment.

CONCEPTUAL SCHEME D

LIVING THINGS ARE PRODUCTS OF THEIR HEREDITY AND ENVIRONMENT.

Concepts

1. An organism is a product of its heredity.
2. The life and growth of a plant is affected by its environment.
3. An organism is a product of its heredity and environment.
4. There is an interchange of material and energy between organisms and their environment.

CONCEPTUAL SCHEME E

LIVING THINGS ARE IN CONSTANT CHANGE.

Concept

1. Plants and animals have changed over the years.

CONCEPTUAL SCHEME F

THE UNIVERSE, AND ITS COMPONENT BODIES, ARE CONSTANTLY CHANGING.

Concepts

1. Bodies in space are in constant motion.
2. The sun is the chief source of the earth's light.
3. Matter on the sun (and other stars) is converted energy, including light energy.
4. The universe is constantly changing; its bodies are in constant motion.

GRADE THREE

CONCEPTUAL SCHEME A

WHEN ENERGY CHANGES FROM ONE FORM TO ANOTHER, THE TOTAL AMOUNT OF ENERGY REMAINS UNCHANGED.

Concepts

1. The sun is the earth's chief source of energy.
2. Energy can change from one form to another.

CONCEPTUAL SCHEME B

WHEN MATTER CHANGES FROM ONE FORM TO ANOTHER, THE TOTAL AMOUNT OF MATTER REMAINS UNCHANGED.

Concept

1. Matter consists of atoms and molecules.

CONCEPTUAL SCHEME C

LIVING THINGS ARE INTERDEPENDENT WITH ONE ANOTHER AND WITH THEIR ENVIRONMENT.

Concept

1. There are characteristic environments, each with their characteristic life.

CONCEPTUAL SCHEME D

A LIVING THING IS THE PRODUCT OF ITS HEREDITY AND ITS ENVIRONMENT.

Concept

1. Living things are related through possession of common structure.

CONCEPTUAL SCHEME E

LIVING THINGS ARE IN CONSTANT CHANGE.

Concept

1. Living things grow and develop in different environments.

CONCEPTUAL SCHEME F

THE UNIVERSE IS IN CONSTANT CHANGE.

Concept

1. There are seasonal and annual changes within the solar system.

GRADE FOUR

CONCEPTUAL SCHEME A

WHEN ENERGY CHANGES FROM ONE FORM TO ANOTHER, THE TOTAL AMOUNT OF ENERGY REMAINS UNCHANGED.

Concept

1. A loss or gain of energy affects molecular motion.

CONCEPTUAL SCHEME B

WHEN MATTER CHANGES FROM ONE FORM TO ANOTHER, THE TOTAL AMOUNT OF MATTER REMAINS UNCHANGED.

Concept

1. In chemical change, atoms react to produce a change in the molecules.

CONCEPTUAL SCHEME C

LIVING THINGS ARE INTERDEPENDENT WITH ONE ANOTHER AND WITH THEIR ENVIRONMENT.

Concept

1. Living things capture matter from the environment and return it to the environment.

CONCEPTUAL SCHEME D

A LIVING THING IS THE PRODUCT OF ITS HEREDITY AND ENVIRONMENT.

Concept

1. A living thing reproduces itself and develops in a given environment.
2. A living thing is the product of its heredity and environment.

CONCEPTUAL SCHEME E

LIVING THINGS ARE IN CONSTANT CHANGE.

Concept

1. The environment is in constant change.

CONCEPTUAL SCHEME F

THE UNIVERSE IS IN CONSTANT CHANGE.

Concept

1. The motion and path of celestial bodies are predictable.

GRADE FIVE

CONCEPTUAL SCHEME A

WHEN ENERGY CHANGES FROM ONE FORM TO ANOTHER, THE TOTAL AMOUNT OF ENERGY REMAINS UNCHANGED.

Concept

1. Energy must be applied to produce an unbalanced force, resulting in motion or change of motion.

CONCEPTUAL SCHEME B

WHEN MATTER CHANGES FROM ONE FORM TO ANOTHER, THE TOTAL AMOUNT OF MATTER REMAINS UNCHANGED.

Concept

1. In chemical and physical change, the total amount of matter remains unchanged.

CONCEPTUAL SCHEME C

LIVING THINGS ARE INTERDEPENDENT WITH ONE ANOTHER AND WITH THEIR ENVIRONMENT.

Concept

1. The capture of radiant energy by green plants is basic to the growth and maintenance of all living things.

CONCEPTUAL SCHEME D

A LIVING THING IS THE PRODUCT OF ITS HEREDITY AND ENVIRONMENT.

Concept

1. The cell is the unit of structure and function; a living thing develops from a single cell.

CONCEPTUAL SCHEME E

LIVING THINGS ARE IN CONSTANT CHANGE.

Concept

1. Living things have changed over the ages.

CONCEPTUAL SCHEME F

THE UNIVERSE IS IN CONSTANT CHANGE.

Concept

1. Bodies in space, as well as their matter and energy, are in constant change.

GRADE SIX

CONCEPTUAL SCHEME A

WHEN ENERGY CHANGES FROM ONE FORM TO ANOTHER, THE TOTAL AMOUNT OF ENERGY REMAINS UNCHANGED

Concept

1. The amount of energy obtained from a machine does not exceed the energy put into it.

CONCEPTUAL SCHEME B

WHEN MATTER CHANGES FROM ONE FORM TO ANOTHER, THE TOTAL AMOUNT OF MATTER REMAINS UNCHANGED.

Concept

1. In nuclear reactions, a loss of matter is a gain in energy; and the sum of the matter and energy remains unchanged.

CONCEPTUAL SCHEME C

LIVING THINGS ARE INTERDEPENDENT WITH ONE ANOTHER AND WITH THEIR ENVIRONMENT.

Concept

1. Living things are adapted by structure and function to their environment.

CONCEPTUAL SCHEMES D & E

A LIVING THING IS THE PRODUCT OF ITS HEREDITY AND ITS ENVIRONMENT.

LIVING THINGS ARE IN CONSTANT CHANGE.

Concepts

1. The characteristics of a living thing are laid down in a genetic code.
2. Changes in the genetic code produce changes in living things.

CONCEPTUAL SCHEME F

THE UNIVERSE IS IN CONSTANT CHANGE.

Concept

1. Nuclear reactions produce the radiant energy of stars, and variations in this result in consequent change.

HEALTH

Recommended Texts

RYERSON SERIES — *Dimensions in Health*

Gr. I	<i>All About You</i>	Irwin et al.
Gr. II	<i>You and Others</i>	Irwin et al.
Gr. III	<i>Growing Every Day</i>	Irwin et al.
Gr. IV	<i>Finding Your Way</i>	Irwin et al.
Gr. V	<i>Understanding Your Needs</i>	Irwin et al.
Gr. VI	<i>Choosing Your Goals</i>	Irwin et al.

LAIDLAW HEALTH SERIES

Gr. I	<i>Health 1</i>	Byrd et al.
Gr. II	<i>Health 2</i>	Byrd et al.
Gr. III	<i>Health 3</i>	Byrd et al.
Gr. IV	<i>Health Science 4</i>	Byrd et al.
Gr. V	<i>Health Science 5</i>	Byrd et al.
Gr. VI	<i>Health Science 6</i>	Byrd et al.

MACMILLAN HEALTH SERIES

Gr. IV	<i>Health Around the Clock</i>	Prunkl & Lougheed
Gr. V	<i>Health Through the Seasons</i>	Prunkl & Lougheed
Gr. VI	<i>A Lifetime of Health</i>	Prunkl & Lougheed

Overall Objective

To develop sound health habits and attitudes of the individual through a background of information based on the scientific facts about the body, its function and its care.

General Aims and Objectives

1. Body Structure and Function
To develop an understanding of body structure and function as a basis for healthful living.
2. Food and Nutrition
To develop the acquisition of good food habits, understandings, attitudes and appreciation as they affect the child's health.
3. Prevention and Control of Sickness and Disease
To develop in the child attitudes, appreciations, understandings and worthwhile practices which contribute to the protection and promotion of his own health and the health of the community.
4. and 5. First Aid and Safety
To help children recognize situations involving hazards and to develop habits of carefulness and obedience to safety rules at home, on the streets, in school or at play, and to help prepare children to face situations involving sudden illness or accidents.

6. Cleanliness and Personal Appearance

To develop those attitudes and appreciations which encourage continued improvement in acceptable appearance, cleanliness and correct posture.

7. Personal Development and Mental Health

To help the child acquire a sense of belonging and adequacy so that he can adjust to the demands of daily life and establish satisfactory relationships with others.

HEALTH SCOPE CHART

Grade I

Body Structure and Function

Care of skin
Keeping face, neck and hands clean
Careful attention to teeth and mouth

Food and Nutrition

Importance of milk and fruit juices
Development of pleasing eating habits
Cleanliness in handling foods

Prevention and Control of Illness and Diseases

First Aid and Safety

Awareness of common accidents in home
Slippery surfaces
Basement: Scene of many accidents
Safety in classrooms and halls
Safety on playground, playroom and gym
Safe bike practices
Appropriate behavior on bus
Toys on sidewalk
Safety patrol
Street and pedestrian safety

Cleanliness and Personal Appearance

Use of clean and appropriate clothing
Ways of caring for one's own clothing
Choice of chairs and tables that "fit"
Correct posture for sitting
Frequent change of position

Personal Development and Mental Health

HEALTH SCOPE CHART

Grade II

Temporary teeth replaced by permanent teeth
Development of healthy teeth depends upon food, cleaning and regular dental care
Good teeth are of great importance too

Prevention and control of colds and other infectious diseases
Awareness of classroom environment
Regular health examinations
Importance of staying home when ill
Avoidance of handling unfamiliar substances
Individual's obligations for cleanliness
Group's responsibility for healthful school environment
Community protection of foods
Relaxation after stimulating activities
Quiet, happy period before bedtime
Need for adequate sleep
Development of independence for bedtime and early morning routine
Importance of supervised and safe swimming areas on the beach
Avoiding potential sources of danger
Safety in the classroom and halls
Safety on the playground and in the gym

Care of hands and face
Care of hair
Pride in being neat and clean

Grade III

Skin care and protection
Cleanliness of face, neck, hands
Care of hair
Care of comb and brush
Care of nails
Good eating habits
Water is essential to the healthy body

Nutritive values of dairy products
Margarine as a substitute for butter
Variety of fruits and vegetables
Willingness to try new foods
Necessary foods for body building
Adequate breakfast, lunch and dinner
Acceptable eating habits
Elimination
Washing hands before eating

Persons who help us with traffic safety

HEALTH SCOPE CHART

Grade IV

Body Structure and Function

Eye—function, structure, care, tests
Ear—function, structure, protection, defect
Difficulties encountered by deaf and dumb
Nose—function of; prevention of germs from entering body; health practices in care of
Circulation—function, structure, rest periods

Food and Nutrition

Prevention and Control of Illness and Diseases

Relationship—bacteria—communicable diseases
Early symptoms of illness
Consideration of others when ill
Signs of fatigue
Selection of T.V. programs
Alteration of quiet and active work or play
Regular hours for sleeping
Mental and emotional activities that release tensions

First Aid and Safety

Simple first aid for common accidents
“Transportation” of victim
Home—common accidents, places and types
School—safety at schools, playground, games

Cleanliness and Personal Appearance

Routines
Frequency of bathing
Own responsibility in personal care

Personal Development and Mental Health

Art of relaxation
Difference between humor and teasing
Relationship between rest and behavior
Friends
Solutions of problems

HEALTH SCOPE CHART

Grade V

Respiratory—function, structure, infections, defects, protection
 Skeleton and muscles—function, structure
 Importance of exercise
 Structure of tooth
 Types of teeth
 Care of teeth: decay reduction
 Function of dentifrices
 Attitudes re bands, care of gums

Importance of rest
 Foods, cleanliness, immunization
 Causes and spread of diseases
 Caution in use of medicines and drugs
 Traffic—urban and rural
 Common causes and treatment in first aid
 Emergency situations (recognizing, dealing)
 Fire drills
 Prevention in home
 Water—rules for swimming, boating, ice
 Posture—body's framework
 Relationship—fatigue, posture
 Appearance
 Standards for acceptable behavior
 Facing difficulties squarely
 Facing reality
 Responsibility—leadership, followership
 Respect for self and others
 Worthy example to younger children

Grade VI

Eye—function, structure, care of, infection, eyeglasses
 Ear—function, structure, care of
 Nose and throat—structure, function, common diseases, care of cold
 Circulation—function, structure, care
 Digestive—structure, function, eating habits
 Relationship between fillings in teeth, consumption of food
 Nervous—function, structure, habits, care of
 Adequate diet
 Canada's food rules
 Quiet activities before and after meals
 Contribution to happy family mealtimes
 Effects of emotion
 Relationship—diet, body weight
 School health problems
 Selection of eating places
 Voluntary health agencies
 Canada's health problems
 Health heroes

Individual signs of fatigue
 Standards for sleep
 Importance of relaxation
 Opportunities and ways to relax
 Peer—group relationships
 Cooperative planning
 Solving individual problems
 Establishment of acceptable emotional patterns
 Forming worthwhile goals
 Study habits

ELEMENTARY SCHOOL PHYSICAL EDUCATION

OBJECTIVES

Physical education is concerned with the development of the whole child through the medium of carefully selected physical activities. As an integral part of the total educational program, physical education contributes to the physical, mental, social and emotional development of the child.

The program in physical education provides the child with an opportunity to develop:

1. motor skills
2. physical fitness
3. emotional control
4. socially acceptable behaviour and
5. desirable knowledge and attitudes to leisure time activities.

In order to achieve the objectives the teacher creates a learning situation which will ensure the optimum development of each child. Since no two children will progress at the same rate nor possess the same skills, the program must account for individual differences by providing latitude in activity experiences. This latitude is achieved through the use of the problem solving approach, which provides each child with the opportunity to proceed at his own rate in exploring and developing skills in movement, thus providing a situation in which each child realizes a sense of achievement, satisfaction and enjoyment.

TIME ALLOTMENT

In order to achieve objectives:

1. A regular sequence of well-planned lessons is essential
2. A minimum of 90 minutes of class time per week should be devoted to physical education instruction
3. In Division I, time should be allotted daily.
4. In Division II, three 30-minute periods per week should be scheduled.

DRESS

To allow freedom of movement, safety, modesty and cleanliness, shorts, T-shirts and running shoes or bare feet are desirable. If classes are unable, for various reasons, to meet the recommended dress requirements, the teacher should in any case ensure the removal of extra clothes and the use of running shoes or bare feet.

Where time and facilities permit, elementary teachers are strongly encouraged to change to suitable clothing. Gym shoes are a necessity.

CONTENT

Elementary school physical education should provide the child with broad movement experiences related to the three fields of physical activity — games, gymnastics and dance. The teacher should allow for experimentation, discovery, selection and consolidation. Problems are related to the management and control of the body. These problems, based upon analysis, are designed to make the child aware of what, where and how he moves. Each child is free to work

out the problems individually within the limits of his capabilities. The teacher, cognizant of the individual's ability, observes carefully and encourages maximum performance from each child.

The physical education program offers three types of lessons in the elementary school and all should be of equal importance in a well-balanced program.

1. Games

Games demand flexibility of thought and action. Emphasis is placed upon learning the fundamentals required for participation in the major games. The development of the following forms the basis of the games program in Divisions One and Two:

- a. Foot work and body work to develop body balance and general agility
- b. Awareness of the use of space
- c. Skill in handling balls, bats, sticks, pucks and birds
- d. Team work, which includes the basic elements of attack and defence.

As skill is acquired, these activities, with varied equipment, can be used in competitive games. The major emphasis at this level should be on lead-up games to the major team sports. The following sequence for the development of competitive games is suggested.

- a. 1 vs 1 (learning to outwit opponent)
- b. 1 with 1 (learning to co-operate)
- c. 2 vs 1 (some co-operation in attack and introduction of a defence)
- d. 2 vs 2 (adjustment from attack to defence)
- e. 3 vs 3 (some element of choice in selecting which player to use)

In Division II, the children should be able to cooperate in larger groups. It would seem desirable to restrict the number of players on a team to six and have several games in progress at the same time.

Skills and lead-up games for the following team and individual activities should be included: volleyball, basketball, softball, soccer, football, badminton, tennis, track and field, and hockey.

Where staff and facilities are available, instruction in skating and swimming should be included in the program.

2. Gymnastics

Gymnastics should provide skill in body management and control. The teacher attempts to build a repertoire of movement which can be applied in a number of situations and to a variety of small and large apparatus. Small apparatus such as hoops, ropes, canes, and skittles can be used. Large apparatus may include mats, benches, chairs, box horses, tables and climbing equipment. Movement themes relating to time, space, weight and flow will form the basis for problems presented at all grade levels. The problems set, and the responses of the children, will be dependent on the age and level of ability of the children.

The children are encouraged to develop sequences of movement which are transferred and adapted to the apparatus.

3. Dance

Dance should provide experience in expressive movement rather than the objective movement of the games and gymnastics lessons. In the dance program both ideas and feelings are expressed through movement. Movement is enjoyed for its own sake, for its quality, shape and pattern. The teacher provides the kind of material that stimulates the imagination, helping children to give clear shape and form to their ideas and opening for them, as they become ready, fresh possibilities in the field of movement.

In Division Two, simple folk and square dance can be included as part of the dance program.

Children may dance without accompaniment, dance to music, or music may arise from, and be fitted to, their dance.

ART

General Objective

Through the provision of art experiences and through the use of a wide range of media and materials, to foster and encourage the personal development and growth in sensitivity, in appreciation, in understanding and in the productive abilities of each pupil in the elementary school program.

Specific Objectives:

1. To assist each child to grow in sensitivity and perception:
 - (1) to *see* in order that he may become visually sensitive to the nature of line, shape, form, tone, color and the organic structures which characterize design in nature and in man-made objects.
 - (2) to *touch* so that he may develop tactile awareness of texture, form and shape.
 - (3) to *think*, through questioning, analyzing, and discussing such similarities, differences and harmonies as he finds in nature, in his own work and the work of others, and in so doing, to establish self-standards of workmanship and appreciation.
 - (4) to *feel* by responding emotionally to his own involvements with art, as well as to the experiences of others, as expressed in line, form and color, and in the language of symbols.
 - (5) to *dream*, by capitalizing on the capacity for wonder; to develop the power to improvise, to extend, to pursue, and to seek answers through inquiry and experimentation.
 - (6) to *make*, by developing the power to initiate creative activity, and from the selection of an idea, to the choice of materials, through to the attainment of a finished product, learn the satisfaction that comes from making something of one's own—a personal statement.
2. To provide each child with a comprehensive set of experiences that will develop his visual, manipulative, imaginative, evaluative and aesthetic powers.
3. To help each child learn to explore the possibilities of a variety of art media and of basic materials in two-dimensional and three-dimensional form.
4. To assist each child to acquire basic artistic skills and techniques and to improve those skills through expanding, enriching experiences or through progressively greater concentration or by a change in emphasis.
5. To get each child to understand and use the common vocabulary of expression and interpretation, the language of art, through meaningful experiences and through self-study or directed study and research.
6. To correlate art with other aspects of the curriculum in order to make the art program more functional and to illustrate how art permeates the whole field of learning.
7. To ensure the opportunity for successful and enjoyable experiences and individuality and pride in achievement on the part of every student.
8. To provide valuable group experiences through joint cooperative projects.

9. To have children discuss their own and their classmates art experiences and products and to learn how to display their completed work effectively.

CONTENT

The Elementary Art Program as outlined in the Scope and Sequence charts is a broad, sequential, structured Art program stressing the two major aspects of Art education: *Creating Art* and *Understanding Art*. This division of the program is not capricious; it should be clear that understanding of the nature and variety of art is of equal importance to creating art products. Indeed for the majority of students, it is quite likely that the appreciative aspects of art education will have the greater impact on their lives.

Five broad skill or experience areas are to be presented at each of the four levels of schooling (pre-school, K-1-2, 3-4 and 5-6). Drawing, Painting, Printmaking, Sculpture (including modeling and constructing) and Fabric (including fabric decoration) are the experience areas to be explored. The capabilities, interests and enthusiasm of the teacher as well as of the students will help to determine the extent of development of each aspect of the program.

Although the program is structured, the intent is not to be restrictive or prescriptive. Rather it is to provide the basic guidelines within which the teacher should operate. The individual teacher and each school staff should have freedom to plan an art program which will provide extensive, rich, rewarding and meaningful art experiences for the students. The actual program, however, will vary from school to school, and from one community to another. Care must be taken to ensure that the students' learnings are increasing in depth and breadth rather than being merely repetitive as the children advance through the grades.

MATERIALS, EQUIPMENT AND RESOURCES

In order to implement a worthwhile program in Art, basic materials, equipment, resources and time must be made available.

RECOMMENDED REFERENCES

BOOKS

Emphasis	Authors	Title	Publishers	Level
DRAWING	Borten, H.	<i>Do You See What I See?</i>	Abelard-Schuman, Toronto	K-4
	Boylston, E. R.	<i>Creative Expression with Crayons</i>	Reinhold Publishing Corp., N.Y.	K-6
	Rottger & Klante	<i>Creative Drawing: Point and Line</i>	Reinhold	4-6
PAINTING	Spilka, A.	<i>Paint all Kinds of Pictures</i>	Henry Z. Wolch Inc., N.Y.	K-4
	Petterson & Gerring	<i>Exploring with Paint</i>	Reinhold	4-6
PRINTMAKING	Andrews, M.	<i>Creative Print-making</i>	Prentice-Hall, N.J.	K-6
	Ofa, Koshi et al.	<i>Printing for Fun</i>	Obolensky, N.Y.	K-6
	Hawkinson, J.	<i>Collect, Print and Paint from Nature</i>	Whitman	3-6
SCULPTURE modelling constructing	Reed & Orze	<i>Art from Scrap</i>	Davis Publications	4-6
	Rottger, E.	<i>Creative Clay Craft</i>	Reinhold	K-6
	Johnson, P.	<i>Creating with Paper</i>	U. of Wash. Press, Seattle	K-6
FABRIC	Rainey, S.	<i>Weaving Without a Loom</i>	Davis Publications	3-6
	Krevitsky	<i>Stitching: Art & Craft</i>	Reinhold	5-6
	Alexander	<i>Fifteen Simple Ways to Weave</i>	McKnight & McKnight, Bloomington, Ill.	3-6
GENERAL	Lark-Hoorwitz et al.	<i>Understanding Children's Art for Better Teaching</i>	Chas. Merrill Books, Columbus, Ohio	K-6
CURRICULUM	Wackowcak & Ramsay	<i>Emphasis: Art</i>	International Text-books, Scranton, Penn.	K-6
DESIGN	Wilson	<i>An Alphabet of Visual Experience</i>	International Text-books	K-6

FILMS

Emphasis	Title	Source	Level
UNDERSTANDING ART	<i>Discovering [Series]</i>	Film Associates, California	

PAMPHLETS

Emphasis	Title	Publisher	Level
PLANNING	<i>Planning Facilities for Art Instruction, N. A. E. A.</i>	Dept. of N.E.A., Washing- ton, D.C.	

FILMSTRIPS

Emphasis	Title	Source	Level
DRAWING	<i>Primary Grade Art Series— Drawings</i>	McGraw-Hill	K-2
	<i>Sketching with Crayons</i>	McGraw-Hill	3-6
PAINTING	<i>Primary Grade Art Series— Painting</i>	McGraw-Hill	K-2
	<i>Finger Painting</i>	McGraw-Hill	K-2
	<i>Working with Paints</i>	E.F.B.	
	<i>Water Colors, Intermediate Art Series</i>	Young America	5-6
PRINTMAKING	<i>Art Activities for Primary Grade Series, Printmaking</i>	S.V.E.	3-4
	<i>We Print Designs and Pictures</i>	Art in Our Classroom Series, E. F. B.	1-6
	<i>Potato Printing</i>	Intermediate Art Series Young America	5-6

Filmstrips [cont'd]

Emphasis	Title	Source	Level
SCULPTURE	<i>Clay Modeling & Primary Grades Art Series</i>	McGraw-Hill	K-2
	<i>Clay Modeling, Classroom Crafts Series</i>	Curriculum	3-6
	<i>Mosaics</i>	S. V. E.	3-4
	<i>Collage</i>	S. V. E.	3-4
	<i>Wood Constructions</i>	S. V. E.	3-4
	<i>Experimenting with Sculpture</i>	E. B. F.	5-6
FABRIC	<i>We Make Designs with Needle and Thread</i>	E. B. F.	1-6
	<i>Weaving on Cardboard</i>	Bailey	
	<i>Weaving—Intermediate Art Series</i>	Young America	5-6
	<i>Wall Hangings—Exploring Art Techniques</i>	Bailey	K-6
DESIGN COMPOSITION & APPRECIATION	<i>Looking for Composition [Series]</i>	Bailey	K-6
	<i>Native Art</i>	N. F. B.	
	<i>Artists of Canada [Series]</i>	N. F. B.	
	<i>Artists of Many Lands, [Series]</i>	Eyegate	
	<i>Elements of Art [Series]</i> <i>This is a Line, This is a Shape</i>	J. Handy	

ELEMENTARY ART
SCOPE AND SEQUENCE
CHARTS

- | | |
|----------|------------------------------------|
| 1 | GRADES: K, 1, 2
AGES : 5, 6, 7 |
| 2 | GRADES: 3, 4
AGES : 7, 8, 9, 10 |
| 3 | GRADES: 5, 6
AGES : 10, 11, 12 |

CREATING ART

1

SKILL	Activity	EQUIPMENT	THEMES	STIMULATION
DRAWING	Experimentation in symbolism.	Crayons, chalk, brushes, tempera, paper, chalkboard.	Anything within child's experience. "Me" is paramount.	Music, conversation, stories, songs, pictures, activities at school and home. Visual cues.
PAINTING	Painting experience with textures, space Finger painting Finger dabbing Spray painting.	Finger paint, Tempera mixed, Tempera dry, Tempera block, Brushes, sponges, Twigs, weeds, paper, Water container, Soap flakes.	Anything within child's experience. "Me" is paramount.	Materials, stories, conversation, songs, poetry, pictures, School and Home activities, Visual cue (line, shape, spot of color).
PRINT-MAKING	Rubbings, mono-printing, clay printing, gadget printing, block printing.	Crayons, colored chalk, pencils, paper (pliable), textured surfaces, weeds, leaves, paint, clay, plasticine.	Themes within the experience of the child to enhance surface areas with patterns.	Texture (discussion), textures in environment: clothing, nature, home. Observation of rich detail in pattern, texture, decoration.
SCULPTURE	Modelling, sculpting, constructing.	Doughs, plasticine, clay, asbestos, sawdust, simple tools, cardboard, plastic, balloons, cord, adhesives, found objects.	Expressive subjects: animals, vehicles, heads, figures, puppets, buildings. Non-objective forms. Geometric shapes, collages, montages, mosaics, mobiles.	Handle media to develop an awareness of a new dimension. Visual and verbal cues. Action, animation, expressiveness to be encouraged.
FABRICS AND FABRIC DECORATION	Simple stitchery, simple applique (glued or stitched), cardboard support weaving, crayon, chalk, on fabric.	Needles, thread, cord, scraps of fabric, crayons, raffia, wool, electric iron.	Shapes: animals, flowers, buildings.	Materials and techniques.

UNDERSTANDING ART

PERCEPTUAL DEVELOPMENT	ART OF THE PRESENT	ART OF THE PAST	CORRELATION
Developing awareness of differences and descriptive aspects of line. Field trips.	Observations of classroom art, artists, child art, Linear aspects of buildings, machines and household objects.	Drawings in story books. Primitive art.	Social studies, language, arithmetic, reading, creative writing.
Differences in color, shape, texture. Application of simple discrimination to work done in class.	Examination of above-mentioned art to distinguish (1) color, (2) shape, (3) texture, also (1), (2), (3) in buildings, household objects, nature.	Paintings in books. Painting of different periods: animals, family, life, games, changes in season.	Reading and language for vocabulary of color, shape, texture. Science, social studies for theme materials. Murals.
Feeling, describing, and depicting simple textures in environment. Collection of textured materials.	The many uses of printing. Printing on paper, fabrics, metal, glass.	Rubbings from stone carvings.	Illustrating themes from other areas in curriculum.
Awareness, form, mass, space. Texture in environment. Developing tactile sense and spacial perception.	See and touch sculpture and ceramics. African, Eskimo sculpture. Sculpture with child appeal.	Heritage of three-dimensional art and architecture. Using models and photographs.	Models of social studies subjects. Dramatizations, Puppetry.
Observing the uses of fabrics and fibres. Appreciating textures and decorated fabrics.	Weaving and stitching around the world, especially primitive cultures.	Baskets, rugs, mats, and hangings from past eras.	Decorating aprons, head pieces, mats, curtains, playhouse materials, puppetry.

CREATING ART

2

SKILL	Activity	EQUIPMENT	THEMES	STIMULATION
DRAWING	Freeforms, objects, figures.	Crayons, chalk, charcoal, brushes, soft pencils, sponge, paper, plasticine, fabric.	Personal experiences. Imagination. Thinking rather than drawing.	Dramatizations, art materials, films, recordings, discussions, field trips, observation.
PAINTING	Designs, pictures, illustrations, murals, finger painting.	Tempera (mixed and dry), Tempera block, bristle brushes, hair brushes, sticks, weeds, toothbrushes, variety of papers (wet or dry).	Personal experiences and observation. Imagination.	School and home activities. Dramatizations, art materials, films, recordings, discussions, field trips, emotions, stories, poetry.
PRINT-MAKING	Block, brayer, vegetable, hand printing. Stencilling.	Blocks of wood, cardboard, rubber (foam or inner tube), plywood, leather, tempera paint, starch, brayer or brush, paper, corks, fabric, sponge, string, knife, stamp pad.	Animals, flowers, letters, symbols (sports events). All-over border patterns. Overlapping. Picture making.	Materials, repeated patterns in environment. Experimenting and creating arrangements with patterns.
SCULPTURE	Modelling, sculpturing, constructing. Manipulative experience with form.	Clay, asbestos, sawdust, papier-mache, cardboard, plastic bags, styrofoam, wire, wax, plaster, balloons, ice, snow, soft wood, simple tools, adhesives.	Subjects suitable to the material. Masks, puppets, relief and incised designs, pottery, panoramas, dioramas.	Materials and techniques. Arrangement and design in the third dimension. Design in motion.
FABRIC AND FABRIC DECORATION	Stitchery, weaving, decorating cloth.	Needles, thread, fabrics, dowels, hangings, cardboard for weaving frames, raffia, wool, twine, weeds, ink, paint, dyes, crayons, pastels.	Creation of a material using fibres. Simple surface enrichment.	Various kinds of stitches. Designing with fibres.

UNDERSTANDING ART

PERCEPTUAL DEVELOPMENT	ART OF THE PRESENT	ART OF THE PAST	CORRELATION
Line and implied line. Collection of examples of linear pattern.	Styles of various artists. Line in printed materials. Visiting artists. Eskimo, Oriental, Mexican, Indian prints.	Reproductions of work of artists: texture, line, quality.	Social Studies, science. Drawing to music. Creative writing.
Color, texture and patterns in environment.	Paintings of various artists re: use of color, shape, texture. Exhibits, demonstrations, gallery tours.	Prints, films, filmstrips. Color, shape, texture in art of cultures studied in social studies.	Social Studies, Science, Reading, Language, Music. Decorating school windows. Stage sets, costumes.
Textures and possibilities in observing each print-making technique.	Field trips to print-making institutions. Eskimo, Oriental prints. Printing techniques in commerce.	Reprints, films of printmaking by artists of various cultures from social studies.	Make an illustrated publication including creative writing as well as art. Posters, invitations, cards, lettering skills.
Line and space texture balance. Light and shadow in modeled or carved objects. Simple design, form.	Opportunity to see, to touch, to discuss sculpture and architecture in community. Visit galleries and museums.	Sculptural and architectural heritage in countries in social studies. Use of masks, totems in primitive societies.	Dramatization with masks. Displays in three-dimensional form to illustrate concepts in other subjects.
Texture, design and surface enrichment in fabric.	Weaving, raffia, reed, bamboo. West Coast Indian, Quebec, local craftsmen. Cultures in Social Studies	Weaving heritage in countries studied in Social Studies	Stitched wall hangings illustrating stories. Clothing: puppets, back drops, dolls, doll clothing.

CREATING ART

3

SKILL	Activity	MATERIALS	THEME	STIMULATION
DRAWING	Non-objective and objective: figure, group, gesture, structural drawings. Scratch-O-grams.	Crayons, chalk, pencils, charcoal, pens, ink, paint and brushes, variety paper, drawing boards, fabric, plasticine.	Awareness of the world: observation, experience, imagination.	Arrangments, poses, natural groupings. Experimentation, conjecture, nature, music.
PAINTING	Design and picture making.	Dry and liquid tempera. Tempera block, watercolor, finger paint, brushes, sponges, twigs, sticks, papers (variety).	Observation: figures, emotions, animals, machines, plants, buildings, faces, night-day, rocks, sports, careers.	Ideas and feelings. Arrangements, poses, groupings, materials, conjecture, experimentation, stories, poems.
PRINT-MAKING	Block & screen printing, Engraving: wax, clay, plastic, film, wood, photo-grams.	String, wood-blocks, linoleum, cutting gouges, printing ink, brayer, frame, cloth, squeegee, finger paint, stencil paper, stencil knife, X-ray film, tools for incising, wringer for press, paper (sensitized), rubber.	Patterns, non-objective design: people, animals, landscape, air-scape, still life, book-plate designs, special events, monograms, sport symbols, architecture.	Texture in contrast to non-texture. Study of design and arrangement. Manipulation of materials and experimentation with techniques.
SCULPTURE	Modelling, sculpting, constructing.	Clay, plaster, vermiculite, wire, toothpicks, leather, metal, sawdust, wax, wood, roots, papier-mache, salt, soap, simple tools, bottles, balloons.	Linear sculpture and construction. Free standing and relief sculpture. Useful objects. Collage, montage, assemblage.	Visual, verbal, tactile stimulations from films, discussions and experience. Art materials. Fantasy: Science fiction, dreams, imaginary forms.
FABRIC AND FABRIC DECORATION	Weaving, basketry, fabric painting, tie-and-dye, twist-and-dye, simple batik, stitchery, applique, knitting.	Natural and man-made fibres and materials. Fabric, paints, dyes, wax, thread, needles, wool, cord, braid, buttons, sequins, reeds, looms.	Creation of materials using fibres. Surface enrichment through objective and non-objective designs.	Contemporary artistic wall hangings and tapestries. Materials and techniques.

UNDERSTANDING ART

PERCEPTUAL DEVELOPMENT	ART OF THE PRESENT	ART OF THE PAST	CORRELATION
Knowledge of line and implied line to indicate: action, strength, tranquility, power, personality, etc. Collection of photographs, sketches to illustrate these.	Viewing of films related to drawing. Line as in commercial art. Use of various drawing tools to make varied lines.	Study of use of line in masterpieces of cultures studied in social studies.	Drawing correlated with every subject. Sketch book—an essential part of pupil equipment.
Knowledge of color, shape, texture. Role of intensity, detail, overlapping and size to indicate distance. Light and dark, bright and dull color in three-dimensional form and depth.	Films related to paintings. Art galleries. Painting in contemporary design, advertising, movies. Examination of prints for difference in composition, application of paint, importance of mood.	Study of painting: films, prints, illustration of art of peoples studied in social studies. Treatments of similar subjects in various cultures. Ways in which styles have developed in common.	Social studies, science—light and color reading—related to painting. Stagecraft costumes for pageants, operas. Murals and friezes.
Tonal and textural qualities in printmaking techniques. Knowledge of texture and tone to enrich picture compositions.	Screen printing for art or commercial jobs. Meaning of printmaking. Qualities of various printing techniques: serigraphy, etching, engraving, lithography, wood cuts, photography.	Study of examples of etchings, lithographs, wood cuts by famous artists of the past.	Poems, stories, songs, topics from science or social studies. Staging a show or sale of class prints. Photography in art and science. Lettering.
Space, mass, texture, tone, balance. Basic design vs. applied design. Positive and negative shapes.	Contemporary architecture and sculpture of the community. Visual aids depicting sculpture.	Roles and relationship of architecture and sculpture in development of cultures studied in the social studies program.	Sculptural effect of rivers and streams. Landscape design. School sculpture. Space and mass in regard to town planning. Stage settings.
Distinguishing between various kinds of fabrics. Awareness of texture and design in fabric. Man-made designs and nature forms.	Films about fabric making. Study of new synthetic fibres. Clothing and fabrics from other cultures. Weavers at work.	Clothing and fabric decoration of other societies. Chinese silks, Medieval tapestries, Spanish serapes, hats, Indian saris.	Stage presentations. Social studies displays.

MUSIC

General Aims and Objectives

Neither a special teacher of music nor a regular classroom teacher has to be a professional singer. However, a good ear for music and a voice that is true, pleasing and steady are highly desirable.

Points Worthy of Consideration

1. Sing for children with directness, simplicity, confidence and enjoyment
2. Develop a widely varied repertoire of songs
3. Try to capture the unique spirit of each song
4. Develop an intelligent and realistic concept of the child's voice
5. Give careful attention to pitching songs accurately. For this purpose use an instrument such as bells, piano, pitchpipe and others.

Objectives for the Early Grades

1. Develop a love and appreciation for many types of music
2. Develop a good light "singing" tone, the ability to match pitch, good breathing habits, good enunciation, and a large repertoire of songs in the choral program
3. Develop an awareness of different moods and rhythms and become acquainted with many selections in the listening program
4. Experiment with a variety of instruments, create, listen to others, become more aware of differences in pitch, and improve pupil's sense of rhythm in the instrumental program
5. Become aware of the need and nature of notation.

Aims and Objectives by Grade III

1. More control of the singing voice, conforming more and more to the rhythm and pitch of group singing
2. Increased ability to conform to rhythmic patterns in moving to music
3. Increased interest in experimenting with the easy-to-play instruments
4. Increased ability in discriminating and reproducing differences between simple intervals (d to m, d to s, etc.)
(1 to 3, 1 to 5, etc.)
5. Increased ability to sing at various levels of loudness and softness (dynamics)
6. Increased application of the reading process through correlation with listening, creative, rhythmic and instrumental activities
7. Increased enjoyment of music by encouraging appreciative listening
8. Increased use of songbook to follow the music scale in familiar songs, recognizing by ear and by eye, familiar, significant tonal patterns
9. Increased opportunities to do solo or small group singing.

Recommended Materials

A. Choral Program

The texts have been selected for their musical worth and interest, and

because they and the accompanying guidebooks reflect in their musical activities the present philosophy of music.

- (1) *Music for Living*, Silver Burdett Co.
- (2) *Our Singing World*, Ginn and Company.
- (3) *This is Music*, Macmillan Company of Canada.
- (4) *Growing with Music*, Prentice-Hall of Canada.

The above series includes music books for pupils, guidebooks for teachers, record albums of songs in each grade, Grades I to VI inclusive.

From these or other suitable sources — a repertoire of from 40-60 songs a year, selected according to interests and abilities of the children.

B. Listening Program

- (1) For Grades I, II, III
 - (a) RCA Victor Basic Record Library, Rhythms Program and Listening Program for Grades I, II, III.
 - (b) Other appropriate records by Children's Record Guild, Young People's Records, etc.
 - (c) Bowmar Orchestral Library.
 - (d) RCA Victor *Adventures in Music*, Division I.
- (2) For Grades IV, V, VI
 - (a) RCA Victor Basic Record Library, Rhythms Program and Listening Program for Grades IV, V, VI.
 - (b) *Music for Young Listeners*, by Lillian Baldwin, Silver Burdett
 - (i) *Green Book*—for Grade IV
 - (ii) *Crimson Book*—for Grade V
 - (iii) *Blue Book*—for Grade VI
 - (c) Bowmar Orchestral Library
 - (d) RCA Victor *Adventures in Music* Series, Division II.
- (3) Filmstrips with recordings and films.

From these or other suitable sources—experiences with perhaps 30 recorded selections.

C. Instrumental Program

- (1) See recommended song books for correlation with choral program.
- (2) Adequate supply of classroom rhythm instruments, chording instruments as piano, autoharp, guitar, etc.
- (3) Small winds: flutophone, tonette, melody flute, with instructions or song books and advanced materials for interested groups.
- (4) Recorder (for higher grades) with instructions and advanced materials.

D. Notations

"Threshold to Music" Charts, Mary Helen Richards.

Note: THE TEACHERS' GUIDEBOOKS ARE ESSENTIAL FOR MAXIMUM USE OF EITHER SERIES OF TEXTS. THE RECORD ALBUMS FOR EACH SERIES ARE CONSIDERED DESIRABLE ADDITIONAL MATERIALS AS ARE THE RECORDINGS FOR THE LISTENING PROGRAM.

At least six per cent of total class time should be allotted to the music program, e.g., a 1,500-minute school week would allow for 90 minutes for music instruction.

FRENCH AS A SECOND LANGUAGE

Objectives

The long range goals in the study of modern languages other than English are effective communication and cultural understanding. The specific goals are to:

- a. Understand the language when spoken at normal speed on a subject within the range of a student's experience.
- b. Speak well enough to communicate with a native speaker on a subject within the range of the student's experience.
- c. Write, using authentic patterns of the language.
- d. Read with direct understanding, without recourse to English translation, material on a general subject.
- e. Understand linguistic concepts, such as the nature of language and how it functions through its structural system.
- f. Understand, through the language, the contemporary values and behavior patterns of the people whose language is being studied.
- g. Acquire an understanding of the significant relationships between the features of the area or country (geographic, economic, political, historical) and the language itself.
- h. Develop an understanding of the literary and cultural heritage of the people whose language is studied.¹

NOTE: The objectives stated in the preceding section are intended as overall goals in a sequence of modern (second or other) language study extending from the Elementary School years through the secondary level. While the cultural understanding and acquisition of significant knowledge aims remain valid at the elementary level, the achievement of skills should emphasize the acquisition of audio-lingual structures. At the elementary level the reading and written skills may also be attempted but to a limited degree.

TERMINAL BEHAVIOR — SPECIFIC EXPECTATIONS FOR THE ELEMENTARY SCHOOL

1. Phonology

A student should be able to demonstrate control of the phonological elements listed below:

- a. All vowel phonemes with particular attention to /y/ as in "bu", /ø/ as in "feu", and the four nasal forms.
- b. All consonant phonemes, with special attention to interference problems such as /r/.
- c. All semiconsonants, /w/ as in "oui", /y/ as in "huit", and /j/ as in "fille".
- d. Sentence cadence (rhythm).
- e. Three patterns of intonation — statement, interrogative, imperative.
- f. Obligatory liaisons such as vousavez (vuzave).

¹ Adapted from GUIDELINES FOR NDEA, TITLE III, issued by the U.S. Department of Health, Education and Welfare, Bureau of Educational Assistance Programs, January 1965.

2. Structural Concepts

A student should be able to demonstrate control of the structural concepts listed below:

- a. Determinatives — Definite: *le, la, l', les*
Indefinite: *un, une, des*
Partitive: *du, de, la, des*
Possessive: *mon, ma, mes, etc.*
Demonstrative: *ce, cet, cette, ces.*
- b. Nouns — singular, plural, masculine, feminine, regular; irregular only if frequent, e.g., *l'oeil, les yeux.*
- c. Adjectives — singular, plural, masculine, feminine, agreement, position.
- d. Pronouns — Demonstrative: *c'est, ce sont, ça*
Interrogative: *qui, que*
Reflexive: *Je me* *leve*, etc.
Personal: a. subject and object
b. *vous* versus *tu*
c. *on* when used for *nous*
d. position of personal pronouns (with only one in sentence).
- e. Verbs — common regular verbs and irregular verbs such as: *aller, boire, vouloir, pouvoir, acheter, mettre, prendre, être, avoir, faire*; infinitive present; immediate future; imperative; passé composé with *avoir* and *être* only for most common verbs; reflexive (most common) such as *se lever, s'appeler, s'en aller.*
- f. Numbers — ordinals (commonly used) and cardinals (at least to 100).
- g. Interrogative adverbs — *quand, où, comment, combien, pourquoi.*
- h. Basic word order in statements.
- i. Interrogative forms especially *est-ce que, qu'est-ce que.*
- j. Negation: *ne . . . pas, ne . . . jamais, ne . . . rien, ne . . . personne.*

3. Vocabulary

A student should be able to demonstrate control of the vocabulary items common to the majority of the themes listed below:

- | | |
|------------------------|----------------------------|
| a. Family | k. Parts of the Body |
| b. Meals | l. Health |
| c. School | m. Occupations |
| d. Clothing | n. Special Occasions |
| e. Home | o. Telephone Conversations |
| f. Sports and Games | p. Restaurant |
| g. Shopping Situations | q. Transportation |
| h. Holiday Activities | r. City, Town, or Farm |
| i. Animals | s. Calendar and Time |
| j. Weather and Seasons | t. Daily Routine. |

A good program will include the structural concepts and vocabulary items necessary to discuss many of the centers of interest listed above. It should be noted that in some programs the vocabulary related to a specific topic is often developed over several units while in others it is grouped in a single center of interest.

4. Cultural and Societal Values

A student should demonstrate an appreciation of the major differences between his own way of life and that of a child in the target culture with respect to the following activities and aspects of living:

- a. Holidays
- b. Songs
- c. Simple Poems
- d. Games
- e. Comparisons in Living.

Recommended Programs

The following programs are recommended for use in the Elementary School program:

Bonjour Line — Part I

Marcel Didier (Canada) Limited
1442 McGill College Avenue
Montreal, Quebec H3A 1Z6

Le Français Partout — Cours Préliminaire

Le Français Partout — I

Le Français Partout — II

Holt, Rinehart and Winston of Canada
Ltd.
55 Horner Avenue
Toronto, Ontario M8Z 4X6

Parlons Français, Levels I, II, III

D. C. Heath, Canada
Suite 1408
100 Adelaide Street West
Toronto, Ontario M5H 1S9

Teachers are encouraged to examine the instructional materials available for all three recommendations in the light of the terminal behaviors suggested for Level I prior to making a decision with respect to the materials which will be selected in a particular system.

Suggested Minimum Course Content

The content to be attempted should reflect a concern for the terminal behavior suggested on pages 72-74 rather than placing undue emphasis on the content from any one of the recommended programs. The attainment of the suggested terminal behavior is predicated on the assumption that daily periods of sufficient length will be allocated to the learning of French as a second language.

1. Suggested Course Content in the Elementary Grades

Bonjour Line — Part I

Grade IV Units 1 to 8 including 5 bis plus the appropriate Exercices en Images as suggested in *Bonjour Line Teaching Guides* published by Chilton Books.

Grade V Units 8 to 15 including 10 bis plus the suggested Exercices en Images.

Grade VI Units 16 to 24 plus the suggested Exercices en Images.

NOTE:

There are three remaining units (25, 25 bis and 26) which might be considered for enrichment or supplementary activities.

Le Français Partout

Grade IV *Le Français Partout — Cours Préliminaire*

Grade V *Le Français Partout I*

Grade VI *Le Français Partout II*

Parlons Français

Grade IV *Parlons Français — Level I*

Grade V *Parlons Français — Level II*

Grade VI *Parlons Français — Level III*

In a number of school systems, French as a second language has been introduced in Grades 1 through 3. A supplement to the Curriculum Guide (Elementary), *French as a Second Language*, is now available to provide guidance for introducing French during the early school years.

LB 1564 C2 A34 1975 GR-1-6
PROGRAM OF STUDIES FOR ELEMENTARY
SCHOOLS

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